PREDICTORS OF USE AND OUTCOMES OF YOUTH AND FAMILY CENTER SERVICES

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Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2001

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Scharff, Karen, Predictors of Use and Outcomes of Youth and Family Centers, Doctor of Philosophy (Health Psychology/Behavioral Medicine), May 2001, 166 pp., references, 59 titles.

This study analyzed data from Dallas Public Schools and Dallas Youth and Family Centers (YFCs) to explore variables associated with referrals to and utilization of Youth and Family Centers. Data from students enrolled in third, eighth or tenth grade during the 1996-1997, 1997-1998 and 1998-1999 school years were analyzed to determine the reasons for YFC referral and utilization, and to compare standardized test scores and attendance.

Of the 6956 students in third, eighth and tenth grades initially referred to YFCs during those three school years, 5173 (74.3%) made at least one YFC visit. The 5173 students made an average of 2.69 visits and accessed an average of 1.18 services per year. Medical visits accounted for 42.5% of YFC visits, and mental health visits accounted for 46% of YFC visits.

Results of logistic regression analyses indicate a significant difference for utilization upon referral and continued use of the YFC when the constant is compared to a set of predictor variables. For both analyses, the predictor variables were Chapter I status, LEP status, reason for referral, gender, special education status, ethnicity, distance from home school to referral YFC, food stamp eligibility and referral source.

While outcome data regarding attendance and scores on standardized tests was limited to records available, results suggest that mean reading scores for eighth graders

were significantly higher during Year 1 for the group that accessed YFC services. School attendance was better for eighth graders who made continued use of a YFC. Use of medical services by third graders was associated with a gain in attendance rather than a slight loss for the third graders who did not access medical services upon referral.

Results of this study were limited by missing data for several records. The competitive atmosphere of health care service delivery and the practical need to know about service delivery at the sites should make data management a priority.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Across the United States, there are efforts to establish clinics on school grounds or nearby to provide direct medical, psychological, social and educational services to students, and occasionally, their families (Fothergill & Ballard, 1998). These centers include Dallas' Youth and Family Centers (YFCs), and are known in the literature as school-based and school-linked centers (Dryfoos, 1993). Nationally, the clinics, or centers, are funded through private non-profit agencies, public health departments, community hospitals, school districts, other government-sponsored entities or some combination of funding sources (Dryfoos, 1993). The Dallas Public Schools' Office of Interagency Collaboration, Community Oriented Primary Care (COPC) of Parkland Hospital System and Dallas Mental Health Mental Retardation (MHMR) Child and Adolescent Services, now known as Dallas MetroCare, operate the YFCs in Dallas through a joint partnership arrangement (Bush, 1997b).

As Adelman and Taylor (1997) note, some researchers make distinctions between school-associated clinics that are "school linked" versus "school based," depending on their location or due to the nature of their funding. The result is some overlap regarding term definitions. Generally, school-based clinics are located on a school campus, and school-linked clinics are situated off campus, but associated with a school. Based on

nationwide surveys, self-described School Based Health Centers (SBHCs) now total approximately 1,200 (Making the Grade, 1999), and there are several hundred more school-linked clinics in the U.S.

Despite their growing numbers, school-based or school-linked clinics are controversial because they offer services that might be considered outside the scope of the school's responsibility (Blum, Pfaffinger, & Donald, 1982). Advocates of school-associated comprehensive services argue that poor physical and mental health as well as child abuse, gang violence, teen pregnancy and substance abuse affect educational success, and schools can play a role in addressing what Adelman and Taylor call these "barriers to learning" (Adelman & Taylor, 1997; Blum et al.).

Referring specifically to the Dallas YFCs, Pearson, Jennings and Norcross (1998, p. 215) write that YFC services are guided by:

> …belief in a holistic approach to addressing children's developmental needs; belief in family-focused and prevention-oriented services; and beliefs that health and mental health services should be available to all children and families, that schools play a central role in the lives of children and adolescents, that a child's well-being affects his or her academic performance, and that all families have strengths and resources and must be empowered to participate in their children's education, growth, and development.

Significance of the Problem

Today's YFCs can trace their origins to three Dallas public schools that organized physical health, mental health and dental health services for their students in 1969 (Bush,

1997b). The 10 Youth and Family Centers operated in or near the Dallas Public Schools are health clinics that offer outpatient physical and mental health services as well as social services to approximately 160,000 students (Bush, 1997b; Pearson, Jennings & Norcross, 1998). Physical and mental health services offered by each YFC include immunizations, urgent care, physical exams, psychiatric evaluations, medication, individual, family and group therapy, and school consultation. While every Youth and Family Center (YFC) provides similar physical and mental health services, social support services are provided based on community needs and staff expertise. For example, social support services might arrange for a child to participate in supervised after-school activities, offer drug education, or parent education. Each YFC serves the student population of approximately 30 schools in that geographic area.

The purpose of this study is to conduct a program evaluation of the Youth and Family Centers through an analysis of referrals, utilization and potential effects of utilization such as changes in standardized test scores and attendance. The first goal of this study is to explore the demographic characteristics of children who utilize the services of their school's YFC. While every school district student technically has access to these services, prior research suggests that factors such as homelessness, home language, and level of acculturation of students as well as a clinic's hours of service and scheduling procedures can influence health care access and utilization (Schur & Albers, 1996; Solis, Marks, Garcia, & Shelton, 1990; Spector, 1996; Weinreb, Goldberg, Bassuk, & Perloff, 1998; Wells, Hough, Golding, Burnam, & Karno, 1987; Woloshin, Schwartz, Katz, & Welch, 1997). In a survey of 630 high school students with access to an SBHC,

Pastore, Juszczak, Fisher & Friedman (1998) found that females were more likely than males to be frequent visitors, but that clinic users and non-users did not differ by age, grade or race. Nader, Gilman, & Bee (1980) found that ethnicity did predict school health care use, as did whether the child came from a nuclear family or from a single parent household. Students with Medicaid as opposed to no insurance or private insurance accessed their SBHC's mental health services more often, utilizing medical and reproductive health services at about the same rate (Brindis et al., 1995). Internal evaluations of the YFCs have reported some demographic information about students who utilize center services, but they have not compared demographic information of YFC users to non-users, or analyzed utilization data for more than one year at a time. (Bush, 1997b).

Another goal of this study is to report the reasons for referral among YFC users. Identification of the most common problems for which students seek services could help YFCs decide how best to allocate resources for prevention and treatment. Analyzing referral reasons according to the students' grade level and ethnicity could point out which subpopulations should be targeted for specific interventions. While some published studies have identified certain general problems, no such study has been conducted in Dallas, and most tend to report information about adolescents, not information about elementary school-aged children. For example, one survey of middle school and high school students found that those who visited their SBHC reported proportionately more emotional problems (no definition given) and more anemia than non-visitors (Santelli, Kouzis, & Newcomer, 1996). High school students who visited their SBHC were

significantly more likely than non-clinic visitors to report they had experienced more than one major stressor--defined as a move to a new home, the death of a friend or relative, or a serious family problem--in the past year (Balassone et al, 1991). Of the high school students surveyed by Pastore et al. (1998), 31% had depression, 16% reported suicidal ideation and 5% reported daily alcohol use. Since previous research tends to focus on adolescents, and provides more general than specific diagnostic information, this study's analysis of data about younger students as well as adolescents will be especially valuable.

Early published outcome measures of a school based or school linked clinics' efficacy pertained to adolescent health behaviors, specifically the number of pregnancies believed prevented, changes in sexual activity among students or the number of teen births across time (Dryfoos, 1988; Edwards, 1977; Zabin, Hirsch, Smith, Streett, & Hardy, 1986). Results indicated that sexual activity does not increase when school-based family planning services become available (Dryfoos, 1988), and that a pregnancy prevention program conducted by staff who also work at a community clinic nearby might lead students to delay sexual activity (Zabin et al.). In one of the first reports of school-based clinics' effects, Edwards reported a significant decrease in student pregnancies and a lower dropout rate due to childbirth after three years of high school clinic services. Kirby et al. (1993) later analyzed the same data as well as information from public birth records and concluded that while birthrates fluctuated from year to year, school-wide birthrates before clinics opened were not significantly different from those recorded immediately afterwards.

This study will also analyze the academic achievement of students who utilize

YFC services compared to that of students who do not visit YFCs. Dryfoos (1994) expresses doubt that school based health centers should be expected to influence academic achievement in a directly measurable way. A similar warning is expressed by Devaney, Schochet, Thornton, Fasciano and Gavin (1993). Devaney et al. add that measuring academic achievement can be problematic. Grades are difficult to compare across classes, schools, grade levels and teachers, and standardized achievement tests might not test enough aspects of a school's curriculum or of students' areas of achievement to be a good measure of learning. They report that another common measure of school performance is attendance, including dropout data and days in school overall. While keeping in mind the limitations, the best way to learn about the effects of SBHC services is to go beyond anecdotal evidence and analyze the information available.

Previous published outcome measures using YFC data have reported students' performance by studying absences, course failures and discipline referrals of students who accessed YFC services within the first six weeks of the school year (Bush, 1997b). Data from the first six weeks of the school year were compared to data from the fifth six-week period. According to this analysis, students who received intensive mental health services showed a decrease in absences, course failures and discipline referrals. The author points out that no control group data was analyzed to better understand the unique role YFC service utilization might have had on the three measures.

The same study compared standardized test scores of students who utilized YFC services to those who did not (Bush, 1997b). Students' scores on the Texas Assessment of Academic Skills (TAAS) from the 1995-1996 school year were compared to their

1996-1997 school year TAAS scores. Results indicated that students who accessed YFC services made smaller gains in reading and the same amount of gain in math when their scores from one year to the next were compared to those of students who did not visit a YFC. YFC users who received intensive mental health services made slightly greater reading and slightly lower math gains than students who did utilize YFC services.

The present study analyzed test data from the Iowa Test of Basic Skills (ITBS) and attendance of students who were referred for YFC services, and compared test scores and attendance of students who visited a YFC with those who did not. Data from a total of three years were analyzed in order to discover possible trends and results that do not come to light with more time-limited program evaluations. Given the large number of SBHCs nationwide, replication of this study could yield information about the utility of SBHCs in general. This study also explored the behaviors and conditions for which children and their families seek treatment, as measured by referral reason and service utilization data. Such information can help school district and community leaders to establish prevention measures that complement, and as much as is possible, reduce the need for, treatment services.

CHAPTER II

REVIEW OF THE LITERATURE

School Based Health Centers

School based health centers (SBHCs) are primary health care clinics located on school campuses. They are designed to meet the health needs of students who do not receive health care elsewhere due to barriers to access such as lack of health insurance, poverty and distance from a source of health care (Committee on Government Operations, House of Representatives, 1994; Devaney, Schochet, Thornton, Fasciano & Gavin, 1993; Starbuck-Morales, 1993). SBHCs typically offer physical exams, vision and hearing screenings, mental health services, reproductive health services, nutrition education and health promotion programs (Making the Grade, 1999; Waszak & Neidell, 1991). Research indicates that SBHCs do provide access to health care for the traditionally underserved (Committee on Government Operations, House of Representatives; National Health and Education Consortium, 1995) and that students with certain demographic characteristics are more likely to access SBHC services (Anglin, Naylor, & Kaplan, 1996; Brindis, Kapphan, McCarter, & Wolfe, 1995; Pastore, Juszczak, Fisher, & Friedman, 1998; Weist, Proescher, Freedman, Paskewitz, & Flaherty, 1995). Very little research exists that explores whether increased access to health and social services provided by SBHCs improves school performance, and if so, in what ways.

While no federal law specifically provides for SBHCs, many school-based health clinics are funded through various federal agencies, including the Maternal and Child Health Bureau, Medicaid and the Family Planning Program of the Department of Health and Human Services and by Title I of the Elementary and Secondary Schools Act of the Department of Education (Kort, 1984; United States Government Accounting Office, 1994). SBHCs are also funded by schools themselves, by private entities such as the Robert Wood Johnson Foundation, and by state agencies, local hospitals and health centers (Dryfoos, 1994; Making the Grade, 1999; Roeder, 1992).

There are currently approximately 1,200 SBHCs operating in the United States (Making the Grade, 1999). States with the most SBHCs are New York with 158, Arizona with 82, Texas with 77, Florida with 64, California with 64 and Connecticut with 64 (Making the Grade, 1999). According to Making the Grade, 63% of SBHCs are housed in urban schools, 26% are in rural schools and 11% are in suburban schools. High schools house 38% of the nation's SBHCs, elementary schools have 33%, middle schools 16% and K-12 schools have 6%. Seven percent of SBHCs are housed in other types of schools.

Researchers have posited several reasons for locating clinics at schools. Anglin, Naylor, and Kaplan (1996) suggest that schools are appropriate sites for health care centers because the buildings already exist, families in the community are familiar with their locations, and the buildings are available for use after school hours. Since over one third of the objectives published in Healthy People 2000 can be directly achieved or significantly affected by schools (McGinnis & DeGraw, 1991), establishing clinics in

schools could lead to more efficient coordination and provision of services necessary to meet the Healthy People 2000 objectives. Research indicates that since the children are already at school, SBHCs can meet the health needs of otherwise underserved children whose parents delay or avoid health care visits if they must miss work or spend money and time on transportation to do so (Flisher et al., 1997; Ho, 1998; Vistnes & Hamilton, 1995). Mental health problems such as depression, anxiety and attention deficit disorders and some chronic illnesses are more effectively treated through combinations of medical, psychological and educational interventions, all of which can be provided at a school, and perhaps more effectively at a school with a SBHC (Anglin, Naylor, & Kaplan, 1996; Granet & Semel, 1993; Sexson & Madan-Swain, 1993). Additionally, the American Medical Association and the National Association of State Boards of Education have asserted that education and health are "inextricably intertwined," such that health improvement efforts depend on education and a student's school performance is affected by his health (The National Commission on the Role of the School in the Community in Improving Adolescent Health, 1990, in Fothergill & Ballard, 1998), suggesting that schools are an appropriate site for clinics, whose staff can provide acute treatment and health promotion services. Finally, clinics are located on campuses because educators are often the professionals who first perceive the need for integrated medical, mental health and social services, and they establish the SBHCs where they work (Bush, 1997a; Iscoe, 1997).

School based health centers' current goal of providing comprehensive health and social services to students evolved from efforts begun approximately 100 years ago to

prevent communicable diseases in overcrowded, unsanitary schools and communities (Fothergill & Ballard, 1998). School health programs were originally designed to combat threats to public health and safety such as smallpox, diphtheria, mumps, measles, contagious eye conditions and rat infestations in public schools (Allensworth et al., 1997). Child labor laws, compulsory school attendance laws and increases in immigration led to an increase in the number of children who attended public school (Dryfoos, 1994). As eradication and prevention of disease became public health necessities, schools were considered the best place to reach the maximum number of children for treatment and prevention. Early health programs took the form of vaccinations and brief examinations of children to check their general health and nutritional status. Treatment of a diagnosed illness or condition was generally left to family physicians or local hospitals (Dryfoos, 1994).

Provision of direct health care services in the schools has always been controversial. Early detractors described school-based care as socialized medicine, or as a form of big government stealing from local doctors' practices. Tyack (1992, in Allensworth et al., 1997) reports that dentists were glad for the first school dental clinics because children were "troublesome" patients whose parents, if they paid their bills at all, paid less than they would for similar services provided to adults. Physicians, on the other hand, were suspicious of providers who might usurp their business. Dryfoos (1994) notes that government intervention in any aspect of life lost its popular appeal at about the start of World War I. Despite efforts by child advocates and annual White House Conferences on Children that started in 1909, very little child-related research or school-based health

care delivery occurred after about 1912. Detractors argued that the government had no business taking the responsibility for child health and welfare that had traditionally been managed by states, and that states presuming to provide services threatened the sanctity of the family. By World War I, school health services were limited to screening, health education and monitoring the school environment (Dryfoos, 1994).

Health care delivery in schools has become more acceptable in recent years due to several factors (Dryfoos, 1993; Kirby, 1986; Kort, 1984). Information gathered in the 1940s about World War II recruits indicated that mental and physical health problems were similar to those identified after World War I, and were often the result of conditions that could have been corrected in childhood (Kort). The increase in the number of single-parent families and families in which both parents work outside the home means that parents find it harder to arrange time for the children's medical appointments (Ho, 1998; Kirby). Additionally, recent laws and funding programs have encouraged more health care delivery in the schools to combat teenage pregnancy, depression, drug abuse and violence (National Commission on the Role of the School in the Community in Improving Adolescent Health, 1990, in Fothergill & Ballard, 1998; Kort). SBHCs continue to be controversial, however, due primarily to concerns about providing reproductive health care (Fothergill & Ballard).

While many SBHCs were originally established in the 1980s as birth control clinics (Dryfoos, 1994), most SBHCs now typically provide an array of physical health, mental health and social services. About 90% of clinics surveyed in the late 1980s provided assessment, referral, diagnosis and treatment for minor injuries, sports

physicals, primary care, health education and mental health counseling (Millstein, 1988, in Balassone, Bell, & Peterfreund, 1991). About 75% of the clinics offered gynecological examinations, diagnosis and treatment of sexually transmitted diseases, immunizations, weight reduction programs and substance abuse counseling (Millstein, 1988, in Balassone et al.). Another survey (McKinney & Peak, 1993) found that 90% of SBHCs provided general medical care, 80% provided counseling to address family relationship issues, 70% provided substance abuse counseling, and 60% provided counseling for formally diagnosed mental health disorders. About a third of the clinics surveyed reported they prescribed contraceptive pills, 16% actually dispensed them, and 30% dispensed condoms. According to the same survey, 29% of SBHC visits were for acute medical care, 26% for preventive health care, 23% for mental health care, 21% for reproductive health care, and 7% for chronic care (McKinney & Peak).

School Based Health Centers have grown in the past 15 years from 40 in 1985 to almost 1,200 in 1998 (Kaplan, Calonge, Guernsey, & Hanrahan, 1998; Making the Grade, 1999). Their explosive growth suggests that they are meeting the health and social service needs of thousands of students. Research continues with regard to SBHC access and utilization, as well as investigation with regard to measuring the possible benefits of improved access to and utilization of SBHCs.

Access and SBHCs

While SBHCs are conveniently located for students, and services are usually provided free or at low cost, access to the SBHCs is not generally automatic because most SBHCs seek parent permission to seek SBHC services (Devaney et al., 1993;

Dryfoos, 1994; Gonzales et al., 1985; Keyl, Hurtado, Barber, & Borton, 1996; Kieltyka, 1997). Although minors in most states do not need parent permission to receive treatment for sexually transmitted diseases, substance abuse, family planning and pregnancy services or mental health counseling (Dryfoos, 1994), SBHCs generally require parents to sign an enrollment form that permits treatment to occur at the SBHC. Some schools send the form home and require the student to return it while other SBHCs require registration in person so clinic staff can explain clinic services, policy and possible limitations to consent. Some clinics will see a student once, with the understanding that parents will give permission before future visits (Dryfoos, 1994). Students who are not enrolled might be served by SBHCs for first aid or other emergencies just as they would by a school nurse at a school without a SBHC (Keyl et al.). Gonzales et al (1985) and Kieltyka (1997) report that itemizing services allows parents to choose which services, if any, they want to make available to their children. The Robert Wood Johnson Foundation, which has funded 24 SBHCs across the country since the late 1980s, uses an itemized consent form (Fisher, Juszczak, Friedman, Schneider, & Chapar, 1992). The Youth and Family Centers of the Dallas Public Schools use an itemized consent form (C. Rodriguez, personal communication, September 18, 2000).

Keyl et al. (1996) studied access to SBHCs by conducting surveys with 149 middle school students and 131 high school students. Both the middle school and the high school had health centers on campus. About 90% of the middle school students and 60% of the high school students identified at least one barrier to SBHC access. Fifty-five percent of the students reported that difficulty getting teacher permission to use the

SBHC was a barrier, 31% cited having to obtain parental permission to enroll in the center, and about 25% of the students cited concerns about confidentiality and hours of operation as barriers. The need for parent permission was the barrier most highly associated with not being enrolled in the center. Balassone, Bell, & Peterfreund (1991) pointed out that some parents might actively oppose their children's enrollment in the school clinic, but that many fail to return the consent form for other reasons. For example, a study conducted in New York City (Welfare Research, 1987, in Dryfoos, 1988), indicated that only three percent of the parents who did not return the consent forms did so because they did not care for the clinic. Eighty-one percent of the parents said they had never received the consent form or thought they had signed it. Another 10% cited satisfaction with their current health care providers.

In the Balassone et al. (1991) study, students at a school with a SBHC were asked about reasons they did or did not seek care and about whether they knew how to access various types of health care, on or off campus. About half the students surveyed (49%) had used SBHC services. Of those who had not used the SBHC, 70% said they did not need to use the clinic, and 9% said they did not think the clinic could help them. Thirty-five percent of the students said they had not turned in the required permission form, although only 6% indicated that their parents would not sign the form. Twelve percent said they were too embarrassed or afraid to visit the SBHC, 8% said their teachers would not let them miss class, and 8% did not know about the SBHC. Eighty-seven percent of the SBHC users in the Balassone et al. study agreed with the statement,

"I felt sure the services I got would be kept confidential and private," although 27% reported there was not enough privacy at the clinic.

Kisker and Brown (1996) studied SBHC access and parent consent for treatment. During their initial survey of 19 SBHCs the year they opened, 64% of parents had given consent for their freshman children to visit SBHCs. By the time the students were seniors, 70% of the parents had consented. Over half (52%) of the students had visited the SBHC by the end of their senior year.

Although adolescents seem very concerned about confidentiality, research indicates that very few adolescents utilize health services without their parents' knowledge. Klein, McNulty, & Flateau (1998) surveyed 259 adolescents in telephone interviews to gauge adolescents' opinions about their health, where they were likely to access health care, and whether they knew of confidential sources of health care. The interview was designed to elicit primarily yes or no responses in order to prevent parents from overhearing sensitive information. Klein et al. found that only 8.4% of the adolescents surveyed had utilized health care services without their parents' knowledge. None of the adolescents who had received such care identified the source as a SBHC.

The growth of SBHCs in the last 15 years means that students who might otherwise not have the opportunity to receive health and social services have clinics in or near their schools. Students who actually utilize the services depend upon permission from their parents and teachers, and express confidence that their privacy will be respected. Once access is arranged, research indicates that other factors affect actual SBHC utilization.

SBHC Utilization

A study of 162 ninth graders in Baltimore indicates that students who take advantage of school-based clinic services are similar in many ways to those who do not (Weist, Proescher, Freedman, Paskewitz & Flaherty (1995). Weist et al. studied clinic records, school academic records and the results of various self-report measures designed to assess stress level, emotional difficulties, behavioral functioning, school adjustment, peer relations, self concept and family environment. The authors concluded that clinic users and nonusers did not differ significantly with regard to race, gender or many of the other characteristics measured. The only differences detected by the survey were related to students who did not access clinic services at least once during the school year, and to high clinic utilizers, defined as students who visited the clinic eight or more times. Students who did not visit the clinic at all were perceived by peers as more socially withdrawn. High utilizers were significantly more likely to be female. They were also more depressed and anxious than all other students surveyed, and more likely to have an external locus of control as measured by the Locus of Control Scale for Children (LCSC).

A study of 630 New York City high school students found that school-based clinic users and nonusers did not differ by age, grade, race, or possible mental health problems as measured by symptoms of depression, or reports of suicidal ideation, suicide attempts, alcohol use, and exposure to violence (Pastore, Juszczak, Fisher, & Friedman, 1998). Frequent users were defined in this study as students who visited the SBHC more than three times in a school year. As in the Weist et al. (1995) study, high use was more common among female students. Mental health problems surveyed were not significantly

different for nonusers, average users and frequent users. SBHC users were also surveyed about their satisfaction with clinic service. Of the 305 SBHC users, 92% indicated that they were very or somewhat satisfied with clinic services, 78% reported being comfortable or very comfortable going to the SBHC, and 74% of the students reported believing that the visits were kept confidential. About half of the clinic users (51%) indicated that the SBHC was their primary source of health care.

In their study of 6,080 students at three high schools over four years, Anglin, Naylor, & Kaplan (1996) found that about 68% of the student population enrolled in the SBHCs during that period. There were no significant differences between enrolled and non-enrolled students with regard to gender, race, ethnicity or school attended. For those who actually attended an SBHC versus those who did not, females were more likely than male students to visit a clinic, and Hispanics were more likely than Blacks or Whites to visit.

Other research indicates that students from certain ethnic groups are more--or less--likely to visit a SBHC. For example, Brindis, Kapphan, McCarter, & Wolfe (1995) surveyed 2,860 students at three urban high schools in northern California about using the SBHCs at their schools. SBHC users in the Brindis et al. study were more likely to be white, female, over 16 years old and depressed. Asian/Pacific Islanders were least likely to visit their SBHC. Students who visited a SBHC for medical services were likely to report poor, fair or good (not very good or excellent) health, to have a mother who had completed high school, and to not be Asian/Pacific Islanders. The profile of the SBHC

mental health user was of a student who reported being depressed and whose mother had completed college.

Santelli, Kouzis and Newcomer (1996) surveyed a total of 3,258 students in grades 6 through 12. The students attended four middle schools and five high schools that had SBHCs on site, and two middle schools and two highs schools that did not have SBHCs. All the students completed an anonymous questionnaire in class. Students who attended schools with clinics reported proportionately more anemia, more emotional problems and were more likely to have met with a social worker or a counselor but were not more likely to have met with a parole officer. They were more likely to have received a sports physical, mental health counseling, and treatment for a cold. The authors reasoned that higher rates of reporting anemia and emotional problems might be due to higher awareness of health issues in students with access to a SBHC.

Balassone et al. (1991) surveyed 614 students who were enrolled in their school's SBHC. The students were asked about stressors they had experienced in the past year, with possible stressors listed as a move to a new home, the death of a loved one, and a serious family problem. Students who actually used the clinic services were significantly more likely than enrolled non-users to report more than one stressor. Additionally, significantly more of them had used drugs or alcohol, had taken a ride with someone who was driving while high, and reported that drug use was a problem in their family.

Since SBHCs are designed to provide services to students who might not otherwise receive care, some research has been conducted to determine whether medical insurance status affects SBHC use (Brindis, Kapphahn, McCarter, & Wolfe, 1995).

Brindis et al. surveyed 2,860 students at three urban high schools in northern California with SBHCs. Students were divided into groups according to insurance status: private insurance, a Health Maintenance Organization (HMO), Medicaid or no insurance. Insurance status did not seem to affect use of the SBHCs for medical services. In contrast, there was a significant difference between students who reported they had Medicaid and all other students when it came to utilizing mental health services. Of the students who reported private, HMO or no medical insurance coverage, 22% of each group accessed mental health services at the SBHC. Brindis et al. found that 30% of the Medicaid students utilized SBHC mental health services, yielding a significant difference ($\underline{p} < .05$).

After studying utilization patterns at three SBHCs, Anglin et al. (1996) concluded that school-based clinics do seem to enhance adolescents' access to medical and mental health treatment when actual time with a practitioner, number of visits and percentage of patients who return for a second visit are used as measures of access. Rather than use survey data, Anglin et al. studied data collected by three Denver, Colorado SBHCs as well as data from research reported about adolescent health care utilization in general and at other SBHCs. They found that students who utilized a SBHC for medical care made an average of 3.3 visits per year, greater than the mean of 2.3 visits per year as reported in national surveys of adolescent-physician contacts (Lieu, Newacheck, & McManus, 1993, in Anglin et al.). Anglin et al. also found that medical providers at the Denver SBHCs spent more time with students than did office-based private physicians in 1990. According to a report by Igra & Millstein (1993, in Anglin et al.), the mean duration of an

adolescent's medical visit in a private physician's office was 15 minutes in 1990, versus 21 minutes per medical visit at the SBHCs. About 74% of students who made an initial mental health visit to a SBHC returned for at least one more session. Prior research had indicated that about 58% of adolescents return after their first mental health appointment in an outpatient clinic (Tolan, Ryan, & Jaffe, 1988, in Anglin et al.). Mean duration of visits for mental health and substance abuse counseling were 47 and 45 minutes respectively, which, according to Anglin et al., are consistent with clinical standards outside SBHCs. Anglin et al. did not draw firm conclusions about increased access to substance abuse counseling due to limited utilization data for comparison.

In her survey of 2,860 high school students, Starbuck-Morales (1993) found that 53% of the students who used an SBHC accessed medical services, 16% accessed mental health services, and 6% accessed reproductive counseling. She also reported that many students used more than one service.

Of the 550 high school seniors surveyed by Adelman, Barker, & Nelson (1993), 471 were enrolled in their SBHC, and 206 (44%) had visited the clinic during their attendance at the school. Clinic users and non-users did not differ with regard to gender, ethnicity, grades or number of absences. Clinic use was affected by the level of stress reported by students. Frequent users, defined as those who visited the clinic at least six times, reported more overall distress, somatization and depression than SBHC non-users, one-time visitors or students who accessed the clinic between two and five times. Many of the students visited the clinic for a variety of reasons. Overall, 91% of the students visited the SBHC for medical reasons, including 18% of the students who accessed the

clinic for birth control. Mental health services, including substance abuse counseling, were utilized by 28% of the students. Students who did not access the SBHC cited parental objections (17%), no need to access services because they were healthy (36%), and concerns about others at school learning about their problems (29%).

Of the 280 middle and high school student respondents surveyed by Keyl, Hurtado, Barber, & Borton (1996), 64% reported they were enrolled in their school's health center. About 87% of self-described enrolled students reported using the SBHC, and accessed a mean of 2.2 types of services in one school year. Of those not enrolled, 54% reported using the SBHC, and accessed a mean of .7 services. About half of the students reported they had recommended the SBHC to a friend, and about a third (34%) of the enrolled students reported they would choose the clinic to visit if they woke up at home the next Monday with a very bad cough and needed to see a doctor or nurse. Although 34% is not a high rate, it was the one place cited by most enrolled students. With regard to barriers to using the SBHC, 68% indicated that getting teacher permission to leave class was the greatest barrier, 31% cited the need for parent permission to enroll, and 26% mentioned concerns about confidentiality.

In their survey of 630 high school students, Pastore et al. (1998) found that of the 305 students who acknowledged using the SBHC, 15% accessed the clinic for sex-related issues. Of those students, 23% reported that they told their parents about those visits. Of those students who reported making non-sex-related visits to the SBHC, 61% told their parents of their visits.

In their survey of 2,860 students from three different high schools in Northern California, Brindis, Kapphahn, McCarter, & Wolfe (1995) found that about 10% of the students accessed their SBHC for reproductive health services. While Brindis et al. did not directly assess satisfaction with SBHC services, they did poll the students about factors that led them to access SBHC services. Brindis et al. found that students used their SBHC because they could trust it (37%), it was convenient (36%), care was helpful (31%), care was inexpensive (9%), and they had nowhere else to go (7%).

Blum, Pfaffinger, & Donald (1982) reported on the acceptance and use of a SBHC after one year in existence at an urban high school of approximately 900 students. They reported that prior to establishing the clinic, planners met with school administrators, parents and students. All interested parties discussed sensitive issues such as provision of contraceptives and treatment of sexually transmitted diseases before the clinic opened. Evaluation after the first year emphasized clinic acceptance and use by students. Blum et al. reported that overall, 45% of clinic visits were for acute minor illness. Family planning services accounted for 2.5% of the visits during the clinic's first month in operation, then rose to account for an average of 15.4% of the visits for the first year. In contrast to other reports on clinic use, Blum et al. observed that weight control and nutrition concerns accounted for 4% of all visits. As with many early evaluations, Blum et al. mentioned the advantages that might accrue to students whose schools house SBHCs, but which are difficult to measure. The researchers concluded that formal and informal exposure to health care providers offers students role models as well as opportunities for education about health issues that might not otherwise be addressed.

Confidentiality and the Family Educational Rights and Privacy Act

Since many SBHCs are funded in part by their host schools, they must be aware of the requirements of the Family Educational Rights and Privacy Act (FERPA).Clinics that receive any form of support from the U.S. Department of Education must comply with FERPA regulations (U.S. Department of Education, 1999). FERPA states that only "information contained in an education record of a student which would not generally be considered harmful or an invasion of privacy if disclosed" can be released to the public. Kieltyka (1997) observed that SBHC records are accessible to SBHC staff only, and that sharing of general information for networking or referral purposes occurs on a "need to know" basis. She added that school staff often knows that a student has accessed a SBHC because he leaves class, but only center staff will know the exact reason. Kieltyka's position on SBHC file management is similar to management of special education records, which are typically separate from general education cumulative files. The Institute of Medicine Division of Health Sciences policy formed the Committee on Comprehensive School Health Programs in Grades K-12 and has published its position that "confidential health records of students should be handled and shared in a manner that is consistent with the handling of health care records in nonschool health care settings in the state (Committee on Comprehensive School Health Programs in Grades K-12, 1997, p. 206).

Outcome Studies

An early report by Edwards et al. (1977) focused on family planning care as well as its overall acceptance by students and school staff. They report that the SBHC was

established after two years of planning by the participating hospital and school district administrators combined with input from community organization personnel, parents, faculty and students. About 35% of pregnant students used clinic services during the SBHC's first full year. By year three, 92% of pregnant students were accessing prenatal care there. Post-partum high school drop out declined from 45% to 10%, and no mothers who returned to school had become pregnant again. The authors concluded that direct clinic services combined with education for expecting parents and on campus daycare combined to help young parents stay in school, and that school staff acknowledged the project's value by planning a similar project in a new magnet high school.

In one of the first reports of school-based clinics' effects, Edwards, Steinman, & Hakanson (1980) reported a significant decrease in student pregnancies and a lower dropout rate due to childbirth after three years of high school clinic services. Kirby et al. (1993) later analyzed the same data as well as information from public birth records and concluded that while birthrates fluctuated from year to year, school-wide birthrates before clinics opened were not significantly different from those recorded immediately afterwards.

Zabin, Hirsch, Smith, Streett, & Hardy (1986) evaluated the effects of a pregnancy prevention program conducted by staff who also work at community clinics near the schools, and to which the students could be referred for direct medical and contraception services. Zabin et al. found that in contrast to the control schools that received no education or treatment, students exposed to the program for three years postponed first intercourse an average of seven months.

The existence of a school-based clinic seemed to positively affect students' knowledge of issues related to HIV, AIDS, other sexually transmitted diseases, alcohol use, drug abuse, violence, depression, suicide prevention and menstruation (Kisker & Brown, 1996). Existence of a school clinic did not seem to affect the level of substance use, contraception use, hospital emergency room use or absenteeism (Kisker & Brown).

Santelli et al. (1996) studied the effect of an SBHC on student use of hospital Emergency Room (ER) services. They found that presence of an SBHC seemed to reduce ER use only for students who had attended the school for over a year. Students who attended a school with a SBHC had fewer overnight hospital stays. The Robert Wood Johnson Foundation also studied ER use, and found that ER use increased over time among students in schools with and without SBHC access. Interestingly, the increase in ER was actually greater among students with access to SBHCs, although the difference was not significant.

Kaplan et al. (1998) studied the effects of SBHC services on utilization of services at an HMO (Kaiser Permanente) by students who had access to both clinics. The authors found that students tended to use the SBHC for mental health, pregnancy and STD testing and preventive care, as in physical exams. In fact, all substance abuse counseling and 96.5% of the mental health visits occurred at SBHCs. Students were more likely to use HMO services for treatment not available at the SBHCs such as contraception, pregnancy care, physical therapy and emergencies due to injury or poisoning.

Research to date indicates that SBHCs have increased access to health care for students who are traditionally underserved. If education and health are inextricably intertwined, perhaps SBHC utilization can improve students' academic performance. The effect of Youth and Family Center utilization on academic performance was studied by comparing performance of students the first six weeks of the 1996-1997 school year with their performance during the fifth six-week period that same school year (Bush, 1997b). One-tailed t test results, including effect sizes were reported with regard to differences in attendance, course failures and discipline referrals for students who utilized YFC services and those who did not. The author concluded that students who utilized intensive mental health services might have benefited from those services because all three measures (attendance, course failures and discipline referrals) improved significantly from the first time period to the second, and effect sizes were medium to large (.56 to 1.41). Bush found that raw mean reading and math scores on the Iowa Tests of Basic Skills (ITBS) were lower for students who utilized the YFC than those who did not. On the other hand, students who received intensive mental health and other social support services made gains on their standardized reading achievement scores from one year to the next while students in the district overall, and students who accessed other YFC services did not make gains in ITBS reading scores.

Purpose of the Study

The study's purpose is to identify characteristics of students who access Youth and Family Center (YFC) services. The study also analyzes school performance

information in the form of standardized test scores and attendance to determine possible associations between YFC service utilization and school performance.

The study's questions are:

1. What variables predict initial use of the YFC at grades 3,8 and 10?
2. What are the variables that predict continued use of a YFC?
3. What are the reasons for referral of students in grades, 3,8 and 10?
4. What are the reasons for referral when students are categorized by ethnicity?
5. What YFC services are accessed by students when the students are categorized by ethnicity?
6. What services are accessed by students when the students are categorized by grade in school?
7. Is there a relationship between YFC visits and school performance?
8. Is there a relationship between utilization of a particular YFC service and school performance?

CHAPTER III

METHODOLOGY

Background

The Dallas Public Schools currently operates 10 School Based Health Centers, called Youth and Family Centers (YFCs) (Bush, 1997b; Pearson, Jennings, & Norcross, 1999). Each YFC is located at or very near a school, and serves students at that school as well as students from approximately 30 other public schools in the vicinity. A Planning Committee composed of representatives from Dallas Public Schools, Community Oriented Primary Care (COPC) of Parkland Hospital System and Dallas MetroCare, formerly Dallas Mental Health Mental Retardation (MHMR) Child and Adolescent Services, monitors operations and makes policy for the YFCs. A subcommittee, the Operations Development Committee, meets weekly to coordinate day-to-day operations. Students are self-referred for YFC services or referred by their families, school staff and community agencies. The referring party completes a YFC referral form, then either obtains parent permission or engages YFC staff to get parent permission for treatment or services and an appointment is scheduled (Bush, 1997b; Pearson, Jennings, & Norcross, 1999). YFCs are open Monday through Friday, including evenings Monday through Thursday. COPC and MHMR also provide on-call crisis services that are available 24 hours per day, seven days a week, and same-day appointments are available for urgent care (Dallas Public Schools, 2000).

Goals of the Dallas Youth and Family Centers

The three partners, Dallas Public Schools, Dallas MHMR and Parkland Hospital, established the following goals for the Dallas YFCs in 1995 (Bush, 1997b):

1. To implement school linked Youth and Family Centers that address physical, emotional, and social needs of students.
2. To promote articulated health and mental health services for the mutual clients of coalition partners at the Youth and Family Centers.
3. To provide access to equitable health and mental health services throughout the Dallas Public Schools within five years.
4. To promote family focused programs, which enhance the well being of families (recreation, adult basic education, and family training).
5. To obtain resources of city, county, state, and federal entities, including Medicaid, grant procurement, and third party payers.
6. To provide training for collaborative project partners staff.
7. To link with local, state, and national school based health and mental health organizations.
8. To develop appropriate evaluation tools to assess and modify services on an annual basis.

Youth and Family Center staff collect data and utilize school district data to monitor progress toward its goals. Permission to use YFC and school district data was

obtained from the Dallas Public Schools Department of Institutional Research and the University of North Texas Institutional Review Board. This chapter describes the data utilized in this study, and research design, measures and procedures for analysis of the data.

Subjects

This study utilized data from Dallas Public Schools records of all registered students in the 1997-1998 and 1998-1999 school years. It also utilized data recorded by the Youth and Family Centers about students referred for services during the 1996-1997, 1997-1998 and 1998-1999 school years. Questions 1, 2, 3, 4, 5 and 6 utilized data from all three school years in order to maximize the number of cases under study. Questions 7 and 8 utilized data from the 1997-1998 and 1998-1999 school years. Tables 3-9 in the appendix list subjects by gender, ethnicity and grade for each database used in analysis.

Definitions

Chapter 1: Chapter 1 of the Elementary and Secondary Education Act of 1965 (ESEA) provides funding to schools in areas with a large proportion of low-income families (United States Department of Education, 2000). Amendments to the ESEA identify goals of the program, now known as Title 1, as helping students "attain grade level proficiency, and improve achievement in basic and more advanced skills" (United States Department of Education). The Texas Education Agency (2000a) further explains if the percentage of low-income children in a particular school's catchment area, known as its "Eligible School Attendance Area," is at least as high as the percentage of children from low-income families in the entire Local Education Agency, in this case, Dallas

Public Schools, that school is Chapter 1 eligible. The level of low income can be defined by data from a U.S. Secretary of Education-approved census, or eligibility for free and reduced price lunch, Aid to Families with Dependent Children, or Medicaid, or a composite of the above criteria (Texas Education Agency, 2000a). A student would be eligible for Chapter 1 services if his school was eligible, and if he was considered by that school's staff to be in need of help, such as small-group instruction, with academic skills.

Iowa Tests of Basic Skills (ITBS): The ITBS are standardized, group-administered achievement tests (Riverside Publishing, 2000). Scores are expressed in normal curve equivalent (NCE) scores, with a mean of 50 and a standard deviation of 21.06. Reliability coefficients for composite scores such as those used in this study are .98 (Yu, 2000).

Limited English Proficiency (LEP): Students in Texas are considered Limited English Proficient if they meet one of the following criteria as published in Texas Education Code s21.455:

> (1) (T)he student's ability in English is so limited or the student is so handicapped that assessment procedures cannot be administered; (2) the student's score or relative degree of achievement on the agency-approved English proficiency test is below the levels established by the agency as indicative of reasonable proficiency; (3) the student's primary language proficiency score as measured by an agency-approved test is greater than his proficiency in English; or (4) the language proficiency assessment committee determines, based on other information such as (but not limited to) teacher evaluation, parental viewpoint, or student interview,

> that the student's primary language proficiency is greater than his proficiency in English or that the student is not reasonably proficient in English (Anstrom, 1996, p. 4).

Reasons for referral: Reasons for referral are categorized in this study according to the narrative recorded by the referring party. No referral reason refers to cases in which no narrative is recorded or when the referral is ambiguous, such as "SST staffing," or "mandatory." According to one YFC manager, no referral reason generally means the student has been referred for immunizations (C. Rodriguez, personal communication, September 18, 2000). Review of the databases indicates that students whose records contain no referral reason access all services. These cases are discussed further in the Limitations of the Study section.

Court involvement cases are referrals to the YFC because a judge has referred that student to the YFC for intervention because the student has committed a crime, or in the case of three cases in this study, records merely indicate the referral was court-ordered.

Educational/social referrals include those for parent education, health education and promotion such as health fairs and breast cancer awareness classes, enrichment programs such as mobile computer labs and day camp-like summer programs as well as case management services to liaison with agencies such as the local housing authority.

Learning/behavior referrals include referrals to address or evaluate signs associated with behavior disorders such as noncompliance, aggression, impulsivity and hyperactivity. Specific mention of Attention Deficit/Hyperactivity Disorder is also included here as are referrals to address possible learning or developmental problems,

cases that involve both learning and behavior problems, and attendance problems not attributed to school phobia.

Medical referrals include referrals for immunizations, acute and chronic medical issues, medical examinations, prescription requests, contraception, and testing for pregnancy and sexually transmitted diseases.

Mental health referrals include cases that mention depression, suicide attempts, bereavement, low self-esteem, anxiety, school refusal due to possible school phobia, a history of having been abused or otherwise traumatized and unspecified family problems. Also included as mental health cases were referrals for counseling and MHMR services without further explanation, a request for intensive mental health evaluation and signs of an adjustment disorder or phase of life problem as defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994). Examples of requests for intensive mental health evaluation include references to "self-mutilation", "severe psychiatric disorder" or multiple symptoms and stressors that require differential diagnosis. Briefly, the DSM-IV defines an adjustment disorder as "the development of clinically significant emotional or behavioral symptoms in response to an identifiable psychosocial stressor or stressors" (p. 623), and a Phase of Life problem as "a problem associated with a particular developmental phase or some other life circumstance that is not due to a mental disorder, or if it is due to a mental disorder, is sufficiently severe to warrant independent clinical attention" (p. 685-686).

Speakers of Other Languages (SOL) referrals are requests for services designed to help students and their families who are not native English speakers, and who are usually

new immigrants. SOL staff members facilitate school enrollment and educate students and their families to sources of support in the community.

Substance abuse referrals are categorized according to whether the referral is substance abuse only or if the case involves a student who demonstrates behavior problems such as truancy or oppositional behavior and is also engaging in substance abuse.

Referral source: The referral source might be the student himself, a family member, a school staff member, a judge or truant officer, or a non-school related professional such as a private health care provider.

Special education services: A student receives special education services if, having been found eligible for special education and related services as a disabled student, his parent or guardian gives permission for the services to be provided. Section 300.7 of the Individuals with Disabilities Education Act (IDEA) defines a child with a disability a child aged 3 through 9 who is experiencing developmental delays or as one having

> mental retardation, a hearing impairment including deafness, a speech or language impairment, a visual impairment including blindness, serious emotional disturbance (hereafter referred to as emotional disturbance), an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who by reason thereof, needs special education and related services (Texas Education Agency, 1999, p. 6).

Youth and Family Centers and services: Youth and family Centers are the product of a partnership between the Community Oriented Primary Care (COPC) division of the Parkland Health and Hospital System, Dallas Mental Health Mental Retardation (MHMR), also known as Dallas MetroCare, and the Office of Interagency Collaboration of the Dallas Public Schools. YFC staff record visits according to services accessed. There are 10 YFCs currently in operation. Six YFCs are located at high schools, three are in or next to middle schools, and one is located next to two elementary schools. When data for this study was gathered, a YFC was located at Barbara Manns High School. It has since closed, and another YFC has opened at North Dallas High School.

Database categories to record YFC services are labeled Community Oriented Primary Care (COPC), Counseling, Dallas Mental Health/Mental Retardation (MHMR), Family and Youth. While students might initially be referred for a particular service, they have access to all the services.

Community Oriented Primary Care (COPC) - COPC services are provided by the Parkland Health and Hospital System. COPC is charged with addressing all students' health needs, such as performing health maintenance and sports physical examinations, taking health histories, conducting laboratory tests and treating acute and chronic medical health conditions.

Counseling - Counseling refers to counseling services provided by Dallas Public Schools YFC personnel. Individual or group counseling might be conducted separately or in conjunction with mental health treatment provided by MHMR.

Dallas Mental Health Mental Retardation (MHMR) - MHMR services are provided through the Dallas Mental Health/ Mental Retardation Center. MHMR provides intensive mental health treatment to students in the form of individual, family or group therapy, medication evaluation and prescription and school consultation.

Family Services – Family services are provided by Dallas Public Schools personnel and include support groups for students and other family members, community health fairs and promotions, legal advocacy for adjudicated offenders, parenting programs and case management.

Youth Services – Youth services include recreation activities, clubs and enrichment classes during the school year as well as in the summer.

Measurement

Logistic regression analyses were conducted to answer Research Questions 1 and 2. Predictor variables for analyses included Chapter 1 status, Limited English Proficiency (LEP) status, referral reason, use of special education services, ethnicity, distance from student's school to the referred YFC, food stamp eligibility and referral source. Ethnicity data are listed in Tables 5 and 6 in the appendix. Predictor variables other than ethnicity are described in Table 9 in the appendix.

The dependent variables for the logistic regression analyses were (a) making one visit to a YFC after having been referred during that school year, and (b) making at least one visit per year to a YFC for two years in a row.

Variables for analysis used to answer Research Questions 3 through 6 included student ethnicity, grade in school, reason for referral to the YFC and YFC visits.

Multivariate analyses of variance (MANOVAs) and repeated measures MANOVAs were conducted to answer Research Questions 7 and 8. The dependent variables to measure the possible effects on school performance were attendance, defined as the number of days present in 175 school days enrolled, and mean normal curve equivalent (NCE) scores on the Iowa Tests of Basic Skills (Wang, Bear, Conklin, & Hoepfner, 1981, in Devaney et al., 1993).

Analysis

All statistical analyses were performed using the Statistical Package for the Social Sciences SPSS Graduate Pack 10.0. An alpha level of .05 was used for all statistical tests.

Multivariate logistic regression was the analysis chosen to address Research Questions 1 and 2. For Yes/No predictor variables, "Yes" was set as the reference category. For example, for Chapter 1 status: Yes/No, the reference category is the group of students who receive Chapter 1 services.

Research Questions 3-6 required using the SPSS Split File and Frequencies commands to categorize cases according to the questions' criteria. Descriptive analyses were performed to determine the number of students, categorized by grade and by ethnicity, who were referred and who subsequently accessed YFC services.

Chi-square analyses were performed for a comparison of proportions of the sample. Categories within the chi-square were considered major contributors to the statistical significance if the absolute value of the standardized residual was greater than 2.0 (Cox & Key, 1993; Hinkle, Wiersma, & Jurs, 1988; SPSS Inc., 1999).

Multivariate analyses of variance (MANOVAs) were used to determine the possible effects of clinic visits on ITBS math and ITBS reading scores for Research Questions 7 and 8. Repeated measures MANOVAs were used to measure possible effects of clinic visits on attendance.

Limitations

A limitation of the YFC database is that of the 6,956 initial referrals used for analysis, 1,979 have no specific referral reason recorded. While one YFC manager indicated that no referral reason generally means that immunizations are the initial referral reason (C. Rodriguez, personal communication, September 2000), utilization data suggest that these students access all services, and comply with the referral by visiting a YFC about as often as other students. Of the 1,979 students referred without a documented reason, 1,474 (74.5%) made at least one visit, versus 74.1% of all other referred students.

Another limitation of this study is that scores from the Texas Assessment of Academic Skills (TAAS) as recorded in the database were not used. While the database identified the scores as normal curve equivalents, some scores were recorded as scale scores, some cases merely recorded that the student took the test, and other cases were missing data from one or both years.

CHAPTER IV

RESULTS

Question 1: What variables predict initial use of the Youth and Family Centers (YFCs) at grades 3, 8 and 10?

The dependent variable initial visit to a YFC was regressed against the predictor variables Chapter I status, LEP status, reason for referral, gender, special education status, ethnicity, distance from home school to referral YFC and food stamp eligibility. The total equation was not significant, χ^2 (18, $\underline{N}$ = 6,956) = 21.776, $\underline{p}$ = .242. In other words, when the model including the group of predictor variables is compared to the constant, the difference in the two chi-squares is not significantly different. Table 10 in the appendix lists predictor variables, parameter estimates, standard error data, significance levels and odds ratios for this analysis.

After conducting the logistic regression as outlined in the study proposal, exploration of other variables in the data set was conducted. Although no studies specifically mention SBHCs, previous research suggests that rapport with a patient can improve his clinic attendance and treatment compliance (Anderson, Toledo, & Hazam, 1982; Macharia, Leon, Rowe, Stephenson, & Haynes, 1992). The relationship between the referring party and the student, therefore, might affect whether that student actually visits a YFC. For example, are students referred by their parents more likely to visit a YFC than students referred by teachers? A logistic regression identical to the analysis

discussed above was conducted, with the addition of referral source as a predictor variable. Due to missing data regarding referral source, sample number was reduced to 4,108 referrals. Of those 4,108 students, 3,151 made at least one YFC visit.

As noted above, the variable initial visit to a YFC was regressed against the predictor variables Chapter I status, LEP status, reason for referral, gender, special education status, ethnicity, distance from home school to referral YFC, food stamp eligibility and referral source. The total equation was significant χ^2 (24, $\underline{N}$ = 4,108) = 112.639, $\underline{p} < .01$. In other words, when the model including the group of predictor variables is compared to the constant, the difference in the two chi-squares is significantly different. Table 11 in the appendix lists predictor variables, parameter estimates, standard error data, significance levels and odds ratios for this analysis.

In contrast to results in the original logistic regression, some significant predictors emerged when referral source was included in the equation. Food stamp status and referral source did yield significance levels of $\underline{p} < .05$. For example, the probability of a student referred by the nurse utilizing a YFC is 7.849 times more likely than the probability of a student referred by the school counselor utilizing a YFC. Students who are not eligible to receive food stamps are .710 times more likely to visit a YFC upon referral, which would mean food stamp eligible students are about 1.4 times more likely (1/ .710=1.408).

Since food stamp status emerged as a significant predictor variable within the logistic regression model, a chi-square was conducted to determine whether food stamp

eligibility by itself was associated with rates of first visits different than that expected by chance. Results of the chi-square were not significant for the entire sample χ^2 (1, N= 6,956) = 1.454, p = .228. Results were significant for the sample analyzed when referral source was included in the logistic regression model χ^2 (1, N = 4,108) = 4.82, p < .05.

Food stamp eligibility and ethnicity were then analyzed in a chi-square to determine whether any particular ethnic group was disproportionately represented in the population of students who are eligible to receive food stamps. Results of the chi-square were significant χ^2 (5, N = 6,956) = 212.44, p < .01. Standardized residual values indicate that more African American students (standardized residual 10.8) and fewer Latino and White students (standardized residuals –7.4 and -4.4, respectively) were eligible for food stamps than their overall numbers in the sample would suggest. These results suggest that while ethnicity is not a significant predictor in the logistic regression model, YFCs are important resources for the poorest students, a high proportion of whom are African American.

Since referral source emerged as a significant predictor within the logistic regression model, a chi-square was conducted to determine whether referral source by itself was associated with initial visit rates significantly different than that expected by chance. Results of the chi-square were significant, χ^2 (6, N = 4,108) = 84.25, p < .01. Students referred by school staff who were not nurses or counselors--probably teachers--were more likely to make a visit than would be expected given their numbers in the sample (standardized residual = 2.7). These results suggest some referral sources possess

characteristics such as rapport with students, or employ better monitoring systems, that encourage greater compliance with a referral.

Question 2: What are the variables that predict continued use of a YFC?

The dependent variable continued use of a YFC, defined as more than one visit per year for both years studied, was regressed against the predictor variables Chapter I status, LEP status, reason for referral, gender, special education status, ethnicity, distance from home school to referral YFC and food stamp eligibility. The total equation was not significant, χ^2 (18, $\underline{N}$ = 6,956) = 11.9, $\underline{p}$ = .852. In other words, when the model including the group of predictor variables is compared to the constant, the difference in the two chi-squares is not significantly different. Table 12 in the appendix lists predictor variables, parameter estimates, standard error data, significance levels and odds ratios for this analysis.

The dependent variable continued use of a YFC was then regressed against the predictor variables Chapter I status, LEP status, reason for referral, gender, special education status, ethnicity, distance from home school to referral YFC, food stamp eligibility and referral source. The total equation was significant χ^2 (24, $\underline{N}$ = 4,108) = 76.447, $\underline{p}$< .01). In other words, when the model including the group of predictor variables is compared to the constant, the difference in the two chi-squares is significantly different. Table 13 in the appendix lists predictor variables, parameter estimates, standard error data, significance levels and odds ratios for this analysis.

Since food stamp eligibility emerged as a significant predictor variable within the logistic regression model, a chi-square was conducted to determine whether food stamp

eligibility by itself was associated with rates of continued visitation different than that expected by chance. Results of the chi-square were not significant for the entire sample χ^2 (1, N = 6,956) = 1.213, p = .271, but were significant for the sample analyzed when referral source was included in the logistic regression model χ^2 (1, N = 4,108) = 4.082, p = .043).

Since referral source emerged as a significant predictor within the logistic regression model, a chi-square was conducted to determine whether referral source by itself was associated with rates of continued visitation significantly different than that expected by chance. Results of the chi-square were significant χ^2 (6, N = 4,108) = 54.86, p < .01. Students referred by school staff members other than counselors or nurses-- probably teachers-- were more likely to make continued visits than would be expected given their numbers in the sample (standardized residual = 4.9).

Question 3: What are the reasons for referral of students in grade 3, grade 8 and grade 10?

Because not all students referred to a YFC actually made a visit, results are reported for students referred and for those students who once referred, made a visit. Students in grade 3, 8 and 10 accounted for a total of 6,956 YFC initial referrals for services for the 1996-1997, 1997-1998 and 1998-1999 school years. Table 1 lists the number of referred students in each grade by referral category.

Table 1.

Number and Percentage of Referrals by Referral Category and Grade

Referral Category	3rd Grade		8th Grade		10th Grade		Category Total
Unspecified	301	(18.1%)	863	(30.5%)	815	(33.0%)	1,979
Medical	467	(28.1%)	1,121	(39.6%)	1,204	(48.8%)	2,792
Learning/behavior	437	(26.3%)	352	(12.4%)	135	(5.5%)	924
Mental health	191	(11.5%)	186	(6.6%)	115	(4.7%)	492
SOL	74	(4.5%)	126	(4.5%)	38	(1.5%)	238
Educational/social	185	(11.2%)	143	(5.0%)	141	(5.7%)	469
Court involvement	2	(0.1%)	8	(0.3%)	7	(0.3%)	17
Substance abuse	2	(0.1%)	31	(1.1%)	12	(0.5%)	45
Total referrals	1,659	(100.0%)	2,830	(100.0%)	2,467	(100.0%)	6,956

Note. SOL = Speakers of Other Languages program.

Of the 6,956 students referred, 5,163 (74.2%) made at least one visit to a YFC. Of the 1,659 third graders referred, 1,214 (73.2%) visited a YFC. Of the 2,830 eighth graders referred, 2,112 (74.6%) made at least one YFC visit. A total of 2,467 10th graders were referred for YFC services, and 1,837 (74.5%) attended at least one YFC appointment. Table 2 lists the number of referred students in each grade by referral category, who, once referred, attended a YFC at least one time.

Table 2.

Number and Percentage of At Least One Visit by Referral Category and Grade

Referral Category	10th Grade		8th Grade		10th Grade		Category Total
Unspecified	219	(18.0%)	652	(30.9%)	603	(32.8%)	1,474
Medical	351	(28.9%)	827	(39.1%)	911	(49.6%)	2,089
Learning/Behavior	321	(26.4%)	263	(12.5%)	105	(5.7%)	689
Mental Health	138	(11.4%)	140	(6.6%)	79	(4.3%)	357
SOL	60	(4.9%)	100	(4.7%)	30	(1.6%)	190
Educational/Social	122	(10.0%)	104	(4.9%)	98	(5.3%)	324
Court Involvement	2	(0.2%)	4	(0.2%)	4	(.2%)	10
Substance Abuse	1	(0.1%)	22	(1.0%)	7	(.4%)	30
Total First Visits	1,214	(100.0%)	2,112	(100.0%)	1,837	(100.0%)	5,163

Note. SOL = Speakers of Other Languages program.

Among the third grade sample, medical issues were the most common reason for the initial referral (n = 467) and first visit (n = 351). Medical referrals accounted for 28.1% of total third grade referrals, and 28.9% of initial visits by third graders. Behavior and academic concerns also accounted for more than a fourth of third grade referrals and visits. A total of 437 third graders (26.3%) were referred due to behavior and/or academic problems, and 321 (26.4%) visited the YFC at least once. Third graders made up almost half of all behavior and academic referrals, accounting for 47.3% of such referrals when they formed only 23.8% of the sample. They accounted for 46.6% (n = 321) of initial

YFC visits to address behavior and academic referrals. While no third grader was referred to a program for criminal offenders or for birth control or STD prevention, two students were referred due to suspected substance abuse.

Of the 2,830 eighth graders referred, 1,121 (39.6% of eighth graders referred) were initially referred to the YFC for medical reasons. Of those 1,121 students referred, 827 made at least one YFC visit. Another 863 students (30.5% of eighth graders referred) were referred for some unspecified reason, and 652 of those 863 made at least one YFC visit. Eighth graders were referred for substance abuse services at a rate higher than their proportion in the sample might suggest. Of the 45 substance abuse related referrals, 31 (68.9%) were for eighth graders, and they made up 73.3% ($\underline{n}$ = 22) of the first visits to address substance abuse issues. While only 1.1% ($\underline{n}$ = 31) of all eighth graders referred had a reported substance abuse problem, the rate for referred 10th graders was less than half of that (.5%, $\underline{n}$ = 12).

Among 10th graders, medical issues accounted for almost half (48.8%) of all referrals ($\underline{n}$ = 1,204) and initial YFC visits (49.5%, $\underline{n}$ = 904). Unspecified referrals made up 33% of all referrals and initial visits with 815 referrals and 602 visits. While 10th graders made up about 35.5% of the referral sample, only 14.6% of all behavior and academic referrals were for 10th graders.

As Tables 1 and 2 indicate, medical services were the most common general referral reason for all three grades studied. Respectively they accounted for the highest number of initial visits for all three grades. Tables 14-16 in the appendix reveal that "Medical" was also the most common specific referral reason listed for all three grades

combined, followed by medical exams. Categorized by grade, the specific referral reason of medical exam plus immunizations was most common, followed by Medical.

Immunizations were the most common referrals for eighth graders, followed by Medical, and 10th graders were referred most often for Medical and for physical examinations. Third graders who made more than one YFC visit over two years came initially for a variety of reasons, most commonly for physical examinations plus immunizations. Medical was the second most common referral reason. The same is true of third graders who made six or more visits, and those who made eight or more visits. Immunizations was the most common initial referral reason for eighth graders who made a total of three or more visits in two years, followed by Medical. The most common referrals were referrals for immunizations and medical exams for students who made six or more visits, then immunizations and Medical for students who made eight or more visits. The most common initial reason for referral for 10th graders who visited three or more, six or more or eight or more times in two years was Medical, followed by a referral for a physical examination.

Students referred for medical reasons visited the YFCs for non-medical reasons. For example, of the 101 students initially referred for medical reasons and who visited YFCs for COPC services, 40 (39.6%) also accessed counseling, 8 (7.9%) accessed family services, 42 (41.6%) utilized MHMR services, and 10 (9.9%) took advantage of youth services.

Question 4: What are the reasons for referral when students are categorized by ethnicity?

Of the 6,956 referrals, 808 (11.6%) students were classified as White, 2,743 (39.4%) as African American, 3,287 (47.3%) as Latino, 34 (.5%) as Native American, 67 (1%) as Asian and 17 (.2%) as Other. Of the 5,142 students who made at least one visit to a YFC, 599 (11.6%) were recorded as White, 2,011 (39.1%) as African American, 2,444 (47.5%) as Latino, 23 (.4%) as Native American, 51 (1%) as Asian and 14 (.3%) as Other. Tables 17-25 in the appendix list details regarding referred students by ethnicity and referral category.

Chi-square analyses were conducted to determine whether any specific referral reason was applied significantly more or significantly less often to students of a particular ethnic group. For this analysis, four categories of ethnicity were created--White, African American, Latino and Other. The Other ethnicity group was made up of Native Americans, Asians and students originally identified as being of Other ethnicity. The chi-square results were significant χ^2 (21, $\underline{N}$ = 6,956) = 434.56, $\underline{p} < .01$. White students were significantly more likely to be referred for learning and behavior reasons and for mental health reasons than their proportion in the referred population sample would suggest. They were significantly less likely to be referred for medical, educational/social and Speakers of Other Languages (SOL) services. African American students were significantly more likely to be referred for learning and behavior problems than their proportion in the referred population sample would suggest. They were significantly less

likely to be referred for mental health, SOL, educational/social, or substance abuse reasons. Latino students were significantly more likely to be referred for SOL and substance abuse reasons than their proportion in the sample would suggest. They were significantly less likely to be referred for learning and behavioral problems, and education/social service reasons. Students of Other ethnicity were significantly more likely to be referred to the SOL program, compared to their representation in the sample.

A review of referrals versus visits indicates that some referral reasons were more likely to lead to an actual visit. While five of six White students referred for substance abuse related issues did visit a YFC, yielding a compliance rate of 83.3% for those cases, court-related referrals ($\underline{n}$ = 17) and substance abuse referrals ($\underline{n}$ = 45) were least likely overall to lead to a first visit. The more common referral categories ranged from 322 visits out of 469 referrals (68.7%) for educational/social programs to 238 visits out of 322 referrals (79.4%) for the SOL program.

Question 5: What services are accessed by students when the students are categorized by ethnicity?

This sample of students utilized a total of 6,051 services, meaning that the 5,142 students who accessed services utilized, on average, 1.18 services. Chi square analyses were conducted, with ethnicity categorized as White, African American, Latino and Other, with Other composed of students identified as Native American, Asian and the initial category Other. Results of the chi-square analyses indicated no service was significantly over-utilized or underutilized by any ethnicity represented in the sample. Table 26 in the appendix provides details regarding service use categorized by ethnicity.

Question 6: What services are accessed by students when the students are categorized by grade in school?

This sample of students utilized a total of 6,051 services, meaning that the 5,142 students who accessed services utilized, on average, 1.18 services. Results of chi-square analyses indicated that significantly fewer counseling services were accessed by third graders than their proportion in the sample would suggest. Table 27 in the appendix provides details regarding service use categorized by grade.

Question 7: Is there a relationship between YFC visits and school performance?

Scores from the Iowa Tests of Basic Skills (ITBS) were used to measure school performance for students who were initially referred to a YFC in third grade and students who were initially referred to a YFC in eighth grade. No ITBS scores were available for 10th graders. Number of days attended out of 175 school days was used to measure school performance from one year to the next for students who were initially referred to a YFC in 3rd grade, 8th grade or 10th grade. Scores and attendance data from the same 74 third graders and 120 eighth graders were used in the following analyses. Attendance data for 191 10th graders were used for analysis. Scores were analyzed based on whether the students visited a YFC or did not, then whether the students made continued use of a YFC or not. Tables 28-55 in the appendix list details of the analyses reported here.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of students initially referred to a YFC as third graders. Results of the MANOVA revealed no significant multivariate main effect for visiting a YFC upon referral. Tests of between subjects effects yielded no significant ITBS score differences

between groups. MANOVA results suggest a significant multivariate main effect on ITBS reading scores for continued use of a YFC, although between subjects results were not significant.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of students initially referred to a YFC as eighth graders. Results of the MANOVA revealed no significant multivariate main effect for visiting a YFC upon referral. Tests of between subjects effects yielded significant ITBS score differences for the first year studied. The mean Year 1 ITBS reading score of students who did not make a YFC visit was 34.39 (SD = 14.91) versus 41.67 (SD = 17.27) for those who did make a YFC visit. The mean Year 2 score of students who did not make a YFC visit was 34.65 (SD = 16.98) versus 42.03 (SD = 18.77) for those who did not. MANOVA results suggest no significant multivariate effect on ITBS reading scores for continued use of a YFC, and no significant between subjects results.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of students initially referred to a YFC as third graders. Results of the MANOVA revealed no significant multivariate main effect for visiting a YFC upon referral. Tests of between subjects effects yielded no significant ITBS score differences between groups. MANOVA results suggest no significant multivariate effect on ITBS math scores for continued use of a YFC, and no significant between subjects results for continued use of a YFC.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of students initially referred to a YFC as eighth graders. Results of the

MANOVA revealed no significant multivariate main effect for visiting a YFC upon referral. Tests of between subjects effects did not yield significant ITBS score differences. MANOVA results suggest no significant multivariate effect on ITBS math scores for continued use of a YFC, and no significant between subjects effects.

A repeated measures MANOVA was conducted to compare attendance of students initially referred to a YFC as third graders. Results no significant main effect for year, no significant effect for the interaction Year x YFC visitation and no significant between subjects effects. Results of a repeated measures MANOVA for continued use of a YFC versus not continued use yielded no significant main effect by year, no significant effect for the interaction Year x Continued Use and no significant between subjects effects.

A repeated measures MANOVA was conducted to compare attendance of students initially referred to a YFC as eighth graders. Results suggest no significant main effect for year, no significant effect for the interaction Year x YFC Visitation and no significant between subjects effects. Results of a repeated measures MANOVA for continued use of a YFC versus not continued use yielded no significant main effect by year or significant effect for the interaction Year x Continued Use. Results suggested significant between subjects effects. The eighth graders referred to a YFC who did not make continued use of the YFC attended a mean of 166.77 (SD = 9.88) days of school Year 1, and 164.91 (SD = 13.6) days of school Year 2. Eighth graders who did make continued use of a YFC attended a mean of 170.55 (SD = 4.67) days of school Year 1, and 169.68 (SD = 6.06) days of school Year 2.

A repeated measures MANOVA was conducted to compare attendance of students initially referred to a YFC as 10th graders. Results must be interpreted with caution because results of Mauchly's test of sphericity (Mauchly's W = 1.00, $\underline{p} < .001$) suggest an increased probability of making a Type I error (Weinfurt, 1994). Results suggest a significant main effect for Year but no significant effect for the interaction Year x Clinic visitation and no significant between subjects effects.

Results of a repeated measures MANOVA for continued use of a YFC versus not continued use (Mauchly's W = 1.00, $\underline{p} = <.001$) yielded a significant main effect by Year. Results suggest no significant effect for the interaction Year x Continued Use and no significant between subjects effects. Practically speaking, mean number of days attended decreased slightly from Year 1 to Year 2 for both groups of students. Attendance for students who did not make continued use of the YFC averaged 165.10 days ($\underline{SD} = 8.86$) Year 1 and 162.64 days ($\underline{SD} = 12.90$) Year 2, a mean of 2.46 fewer days from one year to the next. Students who did make continued use of the YFC attended 165.72 ($\underline{SD} = 8.54$) days Year 1 and 162.41 ($\underline{SD} = 13.33$) Year 2, a mean of 3.31 fewer days attended from one year to the next.

Question 8: Is there a relationship between utilization of a particular YFC service and school performance?

The YFC databases do not identify the specific YFC service to which each student is referred. The databases do, however, record referral reasons and indicate the service or services accessed by each student. Therefore, ITBS reading and math scores and attendance information about students referred to a YFC for mental health reasons

were analyzed based on whether the students made at least one Counseling or MHMR visit upon referral. The ITBS scores and attendance information about students referred for medical reasons were analyzed based on whether the students accessed COPC services. Due to the small number of social service cases, use of social services was not analyzed. No ITBS scores were available for 10th graders. Number of days attended out of 175 school days was used to measure school performance from one year to the next for students who were initially referred to a YFC in 3rd grade, 8th grade or 10th grade. Tables 56-81 in the appendix list details of the analyses reported here.

Mental Health Services

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of 55 third grade students initially referred to a YFC for mental health reasons. ITBS scores of 23 third graders referred who attended at least one counseling or MHMR appointment were compared to the scores of 32 third graders who did not attend a mental health appointment. Results of the MANOVA revealed no significant multivariate main effect for accessing mental health services upon referral. Tests of between subjects effects did not yield significant ITBS score differences between groups.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of 51 third grade students initially referred to a YFC for mental health reasons. ITBS scores of 20 third graders referred who attended at least one counseling or MHMR appointment were compared to the scores of 31 third graders who were referred but did not attend a mental health appointment. Results of the MANOVA revealed no

significant multivariate main effect for accessing mental health services upon referral. Tests of between subjects effects did not yield significant ITBS score differences between groups for Year 1, but did yield significant results for Year 2. Mean ITBS math scores for third graders were 29.68 (SD = 18.56) for those who did not access mental health services and 44.43 (SD = 27.62) for those who did.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of 29 eighth grade students initially referred to a YFC for mental health reasons. ITBS reading scores of 14 eighth graders who attended at least one counseling or MHMR appointment were compared to 15 eighth graders who were referred but did not access mental health services. Results are recorded here with the caution that the sample size is very small. Results of the MANOVA revealed no significant multivariate main effect for accessing mental health services upon referral. Tests of between subjects effects did not yield significant ITBS score differences.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of 25 eighth grade students initially referred to a YFC for mental health reasons. ITBS math scores of 11 eighth graders who attended at least one counseling or MHMR appointment were compared to those of 14 eighth graders referred for mental health services who did not access them. Results of the MANOVA revealed no significant multivariate main effect for accessing mental health services upon referral. Tests of between subjects effects did not yield significant ITBS score differences.

A repeated measures MANOVA was conducted to compare attendance of 32 third graders initially reported to a YFC for mental health reasons. Results must be interpreted with caution because results of Mauchly's test of sphericity (Mauchly's W = 1.00, $p < .001$) suggest an increased probability of making a Type I error. Results suggest no significant main effect for year, no significant effect for the interaction of Year x Clinic Visitation and no significant between subjects effects. A repeated measures MANOVA to compare attendance of 8th graders and 10th graders initially referred to a YFC for mental health reasons is not reported here due to an insufficient number of cases for analysis. Attendance data are reported in Tables 66 and 67 in the appendix.

Medical Services

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of 46 third grade students initially referred to a YFC for medical reasons. ITBS reading scores of 30 third graders who made at least one COPC visit were compared to those of 16 third graders who did not. Results of the MANOVA revealed no significant multivariate main effect for accessing COPC services upon referral and no significant between subjects effects.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of 44 third grade students initially referred to a YFC for medical reasons. ITBS math scores of 29 of third graders who made at least one COPC visit were compared to those of 15 third graders who did not. Results of the MANOVA revealed no significant multivariate main effect for accessing COPC services upon referral. Tests of between subjects effects indicated no significant ITBS score differences.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS reading scores of 175 eighth grade students initially referred to a YFC for medical reasons. ITBS reading scores of 114 eighth graders who made at least one COPC visit were compared to those of 61 eighth graders who did not. Results of the MANOVA revealed no significant multivariate main effect for accessing COPC services upon referral. Tests of between subjects effects indicated no significant ITBS score differences between groups.

A multivariate analysis of variance (MANOVA) was conducted to compare mean ITBS math scores of 171 eighth grade students initially referred to a YFC for medical reasons. ITBS math scores of 111 eighth graders who made at least on COPC visit were compared to those of 60 eighth graders who did not. Results of the MANOVA revealed no significant multivariate main effect for accessing COPC services upon referral. Tests of between subjects effects indicated no significant ITBS score differences between groups.

A repeated measures MANOVA was conducted to compare the attendance of 27 third grade students initially referred to a YFC for medical reasons who visited a YFC. The attendance of 15 third graders who did access COPC services was compared to the attendance of 12 third graders who did not. Box's M results for this analysis indicate that statistical power might be reduced (Weinfurt, 1994). Additionally, results must be interpreted with caution because results of Mauchly's test of sphericity suggest an increased probability of making a Type I error. Results indicate no significant main effect for year but a significant effect for the interaction Year x COPC visit. Results suggest no

significant between subjects effects. Review of the attendance data for practical significance indicates that students referred but who did not access medical services attended a mean of 1.41 fewer days in Year 2 compared to Year 1. Students who did access medical services attended a mean of 4.33 more days Year 2 compared to Year 1. Students who did not access medical services attended a mean of 169.58 days (SD = 5.32) Year 1 and a mean of 168.17 days (SD = 7.43) Year 2. Students who accessed medical services attended a mean of 163.47 days (SD = 14.74) Year 1 and 167.80 days (SD = 10.04) Year 2.

A repeated measures MANOVA was conducted to compare the attendance of 76 eighth grade students initially referred to a YFC for medical reasons. The attendance of 49 eighth graders who accessed COPC services was compared to the attendance of 27 eighth graders who did not. Box's M results for this analysis indicate that statistical power might be reduced (Weinfurt, 1994). Results suggest a significant main effect for year but no significant effect for the interaction Year x COPC visit and no significant between subjects effects.

A repeated measures MANOVA was conducted to compare the attendance of 106 10^{th} grade students initially referred to a YFC for medical reasons. The attendance of 74 1oth graders who accessed COPC services was compared to the attendance of 32 10^{th} graders who did not. Box's M results for this analysis ($F = 3.546$, $p < .014$) indicate that statistical power might be reduced (Weinfurt, 1994). Additionally, results must be interpreted with caution because results of Mauchly's test of sphericity suggest an increased probability of making a Type I error. Results indicate a significant main effect

for year but no significant effect for the interaction Year x COPC visit and no significant between subjects effects. Review of the attendance data for practical significance indicates that the maximum difference between days attended was for students referred who did not access medical services. They attended a mean of 166.53 days (SD = 5.83) Year 1 and 162.87 days (SD = 11.46) Year 2.

CHAPTER V

DISCUSSION OF FINDINGS AND RECOMMENDATIONS

Access to and Utilization of Youth and Family Centers

Results of this study indicate that of the 6,956 students in third, eighth and 10th grades initially referred to Youth and Family Centers during the 1996-1997, 1997-1998 and 1998-1999 school years, 5,173 (74.2%) made at least one YFC visit. The 5,173 students made an average of 2.69 visits and accessed 1.18 services per year versus 2.2 types of service per year reported by Keyl et al. (1996). The 3,526 students who made medical visits did so an average of 1.71 times per year, compared to 3.3 visits reported by Anglin et al. (1996). Medical visits accounted for 91% of visits in the Adelman et al. (1993) study, whereas 42.5% of the YFC visits were medical visits. A difficulty in comparing visit proportions is that the Adelman et al. study does not explicitly report whether services other than medical and mental health are offered. Another difference in the percentages might be due to Adelman et al. counting birth control visits, and while YFCs offer pregnancy testing, they do not offer birth control.

Of the 692 students who made one Dallas Mental Health Mental Retardation (MHMR) visit to a YFC, 455 made a second one, and of the 1,019 students who made one counseling visit, 588 made a second one. Such repeat visitation computes to 61% of students who made a second visit compared to 74% of high school-aged students reported by Anglin et al. (1996) who made a second mental health visit and the 58% reported by

Anglin et al. for other adolescent outpatient mental health facilities. While mental health and substance use visits accounted for 28% of the visits reported by Adelman et al. (1993), MHMR and counseling visits made up 46% of the YFC visits recorded.

Medical services were the most common general referral reason for all three grades studied, and accounted for the highest number of initial visits for all three grades. Specific medical services, such as immunizations, medical exams, and services reported merely as "medical" were the most common initial referral reasons for all students as well as frequent YFC visitors. That initial referral often led to utilization of other services.

While the number of students referred for substance abuse issues totaled only 45, it is likely that several more students are affected by substance abuse, either as abusers themselves or as children of parents who abuse drugs and alcohol. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2000) reports that 10.9% of American youth surveyed in 1999 reported using illicit drugs and 7.8% reported binge drinking--consuming five or more drinks on the same occasion, within a couple of hours --at least one time in the past 30 days, and 15.9% reported habitual cigarette use. Results of surveying Texas youth indicates that 10.4% of Texans between the ages of 12 and 17 used illicit drugs at least once in the 30 days prior to the survey, 13.4% smoked cigarettes and 11.3% engaged in binge drinking (SAMHSA). No mention is made of substance use prevention or treatment by authors of previous studies involving YFCs (Bush, 1997b; Pearson, Jennings, & Norcross, 1999).

Factors Associated with Utilization

Data recorded by ethnicity suggest that no specific ethnic group underutilizes or over utilizes YFC services overall. These results are consistent with those reported by Anglin et al. (1996), Pastore et al. (1998) and Weist et al. (1995). Students referred to the Speakers of Other Languages (SOL) program did tend to be Latino, likely because a high proportion of new students who do not speak English happen to be Latino. Programs such as SOL can be initially helpful with services families need immediately, while introducing them to the YFCs' wide range of services and possibly leading to further utilization.

Results also suggest that YFCs are heavily utilized by students who are eligible to receive food stamps. Proportionally speaking, more African American students and fewer White or Latino students in the sample were food stamp eligible, which means that African Americans, specifically those who are food stamp eligible, depend on YFCs for services they might not be able to access elsewhere. Review of utilization patterns indicates that as with the entire sample, medical and learning/behavior issues are the two most common reasons that food stamp eligible students are referred for and access YFC services.

Ethnicity seems to play some role with regard to referral reason and YFC utilization for substance abuse services. Although the actual numbers are small, it is interesting to note that while 23 of 34 Latinos referred for substance abuse reasons did make a YFC visit, only 2 of five African American students referred for the same reason made YFC visit. Perhaps African Americans are referred or feel more welcome to access

services elsewhere, or more Latinos are referred and feel more welcome to visit YFCs. While the substance abuse issue might demonstrate some utilization differences between ethnicities, it is prudent to remember Spector's (1996, p. 67) warning that "…each person is an individual; therefore, levels of heritage consistency differ within and between ethnic groups as do health beliefs."

One of the issues not reported in previous school-based health center (SBHC) literature refers to compliance with a referral based on the referral source. Odds ratios reported in the logistic regression results for the first two research questions suggest that referral source can influence compliance. Results of a chi-square indicate that students who are referred by school staff members other than counselors or nurses--probably teachers--are more likely to make that first clinic visit than their numbers in the population sample would suggest (standardized residual 2.7), and are more likely to make continued visits (standardized residual 4.9). Review of the reasons for referral suggests that school staff make referrals for a variety of reasons, including referrals for immunizations and physicals that are necessary for continued school attendance and require only one visit, so perhaps families are more likely to visit a YFC.

Several factors might account for the increased compliance with a YFC referral when that referral is made by a school staff member such as a teacher. Teachers are likely to be familiar with students, see them on a daily basis, and can use their training and experience to identify students who would benefit from YFC services. Teachers also have the opportunity to develop a rapport with students, and can utilize informal resources such as notes home as well as more formal systems such as student study teams to

facilitate compliance. This positive aspect of teacher involvement contrasts with reports by Balassone, Bell, & Peterfreund (1991) and Keyl, Hurtado, Barber, & Borton (1996) that students report some resistance by teachers to SBHC use. Perhaps teachers are excellent case managers at encouraging compliance, but prefer students to access services outside class time.

Utilization of YFCs and Academic Performance

As Devaney et al. (1993) and Dryfoos (1994) warned, measuring variables and attributing them to SBHC utilization involves so many known and presumably unknown or non-quantifiable factors that measurement and attribution of outcomes is extremely difficult, if not questionable. On the other hand, as Making the Grade (1998) points out, "The increased accountability demanded by managed care and the assumption that health plans have adequate provider networks to serve their beneficiaries has placed new pressures on school-based health centers to justify their existence." Even though YFCs are funded and managed by sources that have committed themselves to the project, those sources depend on funding that is managed by people at Dallas MetroCare and Parkland COPC who are very likely affected by managed care, including Medicaid constraints, and by Dallas Public Schools, who presumably have several demands on funding. The Making the Grade publication (1998) continues, "…the market is continually asking, 'What are you and prove to us you have value in the marketplace.'" One way of proving value in the marketplace is to point out an association between YFC use and academic performance.

Unfortunately, as with the attempts at predicting factors that affect referral and utilization, attempts at tying utilization to academic outcomes have yielded only some statistically significant results, which might prove practically important over time. For example, mean Iowa Tests of Basic Skills (ITBS) reading scores for eighth graders were higher for the group of students who accessed the YFC, and significantly higher for Year 1. School attendance was better for eighth graders who made continued use of a YFC, and use of medical services by third graders is associated with a gain in attendance rather than a slight loss for the third graders who did not access medical services.

Research across more time with more data from frequent users (students who visit weekly, or monthly, for example) might be helpful in making an argument for the preventive benefits of YFC utilization. A review of attendance data of 34 students who utilized a YFC 10 or more time in two years indicates that they attended a mean of 162.06 (SD=14.74) days Year 1 and 164.56 (SD=8.79) Year 2, not a statistically or practically significant difference, but one that might prove significant over more than two years.

YFC utilization could help students with chronic illness stay in school. Unfortunately, this database did not include enough students to draw conclusions. In fact, only two students, both with asthma as the specific reason for referral, also had attendance data. It is interesting to note that the student who accessed the YFC attended 148 of 175 days versus 132 of 175 days for student who did not visit the YFC. The student who visited the YFC did so only one time in two years, however. Additionally, 27

days absent is still a high number, and no level of asthma severity is recorded that would allow for predicting need for treatment or prevention services.

Limitations of this Study

As previously mentioned, the YFC database of 6,956 students contained 1,979 referrals with no specific referral reason recorded. Only 4,108 records listed the referral source. Of the 6,956 referrals, 2,312 record no specific service requests. There is no record of baseline data, progress or discharge in the database.

The Dallas Public Schools database was likewise incomplete. Scores from the Texas Assessment of Academic Skills (TAAS) as recorded in the database were not used. While the database identified the TAAS scores as normal curve equivalents, some scores were recorded as scale scores, some cases merely recorded that the student took the test, and other cases were missing data. Attendance data and scores from the Iowa Tests of Basic Skills (ITBS) were also incomplete. Even allowing for transfers in and out of the school district, a significant portion of the students' records were missing data. For example, of the 1898 students who were referred for medical services, only 222 records contained both Year 1 and Year 2 attendance data. Of the 298 students referred for social services, 40 records contained both Year 1 and Year 2 attendance data.

Due to missing data, sample sizes for analysis were reduced. Some of the sample sizes were so small that analysis could not be conducted. Of the analyses performed to address Research Questions 7 and 8, only two had power above .8. Keeping in mind that it is important to be aware of looking for statistically significant as well as practical

effects, a larger sample size would have made more analyses possible, and might have raised power sufficiently to detect significant results.

While all YFCs operate by the same guidelines, they reflect the needs and resources of their respective populations. Hours of operation, staffing, materials and services vary. Results of this study are based on the aggregate of 10 different clinics. No generalizations can be made about whether results apply to any specific Youth and Family Center or any other SBHC. Some clinics might be more vigilant about maintaining records, about conducting community outreach or about providing preventive services, for example. Some clinics might provide the type or quality of services that do yield more easily measured changes in academic performance.

Finally, the YFCs as they exist now have been in operation since 1996. Research suggests that as clinics age, they mature, expand their services and draw more students (Dryfoos, 1985; Edwards et al., 1977; Kisker & Brown, 1996). It is possible that incremental changes over time lead to better health that is eventually reflected in standardized test scores and attendance data. Results reported here reflect the effects of the YFCs for their initial school years of operation, 1996-1997, 1997-1998 and 1998-1999.

Recommendations

Results of this research study are based on available data. Unfortunately, several cases are missing data. Over 28% of YFC referrals for the years studied recorded no referral reason. Test data and attendance data from the Dallas Public Schools was likewise incomplete. No baseline indices of symptom severity behavioral data were

recorded, nor were similar follow-up data recorded. Some data is likely available in actual files, but privacy and logistic considerations would make data gathering, interpretation and coding extremely time consuming. An investment in better data management might prove worthwhile, however, in order to compete for continued funding and to make informed decisions about how to spend those dollars. For example, it is possible that students with asthma or diabetes do benefit from YFC access, their attendance is better with YFC access, and that schools, therefore, receive funding that they might not otherwise receive if those students stayed home. Research over time with a sufficient number of students would bear this out. As long as the referral reason is blank or says merely, "medical," and attendance figures are available for only 505 of 4,197 students in a two-year database, no reliable conclusions can be made. The YFC partners might consider spending more of their budget or teaming with other partners, including one of the local universities or private institutions, to improve data management.

If increased compliance with YFC referrals is a priority, further study of successful referrals could be helpful. Perhaps orientation and training by YFC staff regarding completing the forms and ways to encourage students and families to follow-through would lead to increased compliance. Some referrals may require just one visit, so continued use might not always be necessary, but the demonstrated role of the referral source in this study warrants a closer examination of informal and formal case management efforts.

Another aspect of referral source and subsequent utilization that bears further study is that of a student's locus of control regarding health. There are likely certain

points in human development where help-seeking shifts from the parent to the student, depending on the help sought. For example, a young child might independently visit a clinic after sustaining a minor injury on the playground, and an adolescent might seek counseling without informing parents. A review of the referral reasons in the narrative section of this study's database indicates that a "self-referral" often involves other informants. Additionally, Weist et al. (1995) reported that females with an external locus of control featured prominently in the population of frequent clinic users. A simple question such as, "Whose idea was it for you to come here?" on an intake form might help to determine at what age students seek help for themselves, and for which services. Those services could then be promoted, and when students visit a YFC, staff could assess for risk behaviors and offer appropriate follow-up treatment and prevention services. Another promising area of YFC utilization and outcome research is apparently being conducted (Rodriguez & Ramos, 2000). In addition to questions on the YFC family surveys that gauge overall satisfaction, questions have been added that ask about what that family would have done if had they not been able to access YFC services. Answers to these questions might provide measurable outcome data that makes the best argument for continued funding of YFCs. For example, the responses might indicate that families who otherwise would have visited an ER for non-emergency issues use YFCs, and that families who otherwise would not have sought services at all do improve their lives through YFC utilization.

APPENDIX

Table 3.

School Population Data by Gender

Gender	1997-1998	1998-1999
Male	6,543 (52.5%)	5,487 (54.0%)
Female	5,910 (47.5%)	4,672 (46.0%)
Total	12,453 (100.0%)	10,159 (100.0%)

Table 4.

Youth and Family Center Referrals by Gender

Gender	1996-1997	1997-1998	1998-1999
Male	4,589 (52.3%)	7,241 (52.1%)	6,129 (53.2%)
Female	4,187 (47.7%)	6,667 (47.9%)	5,397 (46.8%)
Total	8,776 (100.0%)	13,908 (100.0%)	11,526 (100.0%)

Table 5.

School Population Data by Ethnicity

Ethnicity	1997-1998	1998-1999
White	1,370 (11.0%)	1,114 (11.0%)
African American	4,434 (35.6%)	3,801 (37.4%)
Latino	6,435 (51.7%)	5,108 (50.3%)
Native American	54 (0.4%)	46 (0.5%)
Asian	160 (01.3%)	90 (0.9%)
Other	0 (00.0%)	0 (0.0%)
Total	12,453 (100.0%)	10,159 (100.0%)

Table 6.

Youth and Family Center Referrals by Ethnicity

Ethnicity	1996-1997	1997-1998	1998-1999
White	1,155 (13.2%)	1,535 (11.0%)	1,226 (10.6%)
African American	3,505 (39.9%)	4,849 (34.9%)	4,162 (36.1%)
Latino	3,966 (45.2%)	7,255 (52.2%)	5,687 (49.3%)
Native American	42 (0.5%)	54 (00.4%)	47 (0.4%)
Asian	107 (1.2%)	176 (1.3%)	100 (0.9%)
Other	1 (0.0%)	39 (0.3%)	304 (2.6%)
Total	8,776 (100.0%)	13,908 (100.0%)	11,526 (100.0%)

Table 7.

School Data by Grade

Grade	1997-1998		1998-1999	
Early childhood	32	(0.3%)	55	(0.5%)
Pre-Kindergarten	500	(0.4%)	250	(2.5%)
Kindergarten	924	(7.4%)	549	(5.4%)
1	713	(5.7%)	721	(7.1%)
2	654	(5.3%)	664	(6.5%)
3	652	(5.2%)	676	(6.7%)
4	620	(5.0%)	604	(5.9%)
5	705	(5.7%)	669	(6.6%)
6	754	(6.1%)	644	(6.3%)
7	1,191	(9.6%)	930	(9.2%)
8	1,110	(8.9%)	817	(8.0%)
9	2,318	(18.6%)	1,707	(16.8%)
10	969	(7.8%)	839	(8.3%)
11	701	(5.6%)	555	(5.5%)
12	610	(4.9%)	479	(4.7%)
Total	12,453	(100.0%)	10,159	(100.0%)

Table 8.

Youth and Family Center Referrals by Grade

Grade	1996-1997		1997-1998		1998-1999	
Not applicable	44	(5.1%)	484	(3.5%)	485	(4.2%)
Early childhood	15	(.2%)	33	(.2%)	68	(.6%)
Pre-Kindergarten	137	(1.6%)	573	(4.1%)	317	(2.8%)
Kindergarten	362	(4.1%)	989	(7.1%)	582	(5.0%)
1	450	(5.1%)	756	(5.4%)	768	(6.7%)
2	377	(4.3%)	697	(5.0%)	709	(6.2%)
3	392	(4.5%)	684	(4.9%)	715	(6.2%)
4	390	(4.4%)	663	(4.8%)	650	(5.6%)
5	420	(4.8%)	747	(5.4%)	748	(6.5%)
6	559	(6.4%)	809	(5.8%)	683	(5.9%)
7	909	(10.4%)	1,259	(9.1%)	985	(8.5%)
8	1,052	(12.0%)	1,171	(8.4%)	865	(7.5%)
9	1,637	(18.7%)	2,479	(17.8%)	1,838	(15.9%)
10	989	(11.3%)	1,053	(7.6%)	919	(8.0%)
11	575	(6.5%)	762	(5.5%)	596	(5.2%)
12	468	(5.3%)	749	(5.4%)	598	(5.2%)
Total	8,776	(100.0%)	13,908	(100.0%)	11,526	(100.0%)

Table 9.

Predictor Variables and Number of Referred Students in Each Category

Predictor Variable	Description
Chapter 1 status	Receives Chapter 1 services
	Yes (n = 1,747)
	No (n = 5,209)
Limited English Proficient (LEP)	Yes (n = 1,924)
	No (n = 5,032)
Referral reason	Medical (n = 2,792)
	No referral reason given (n = 1,979)
	Learning/behavior (n = 924)
	Mental health (n = 492)
	Speakers of Other Languages (SOL)
	(n = 238)
	Educational/social services (n = 469)
	Court involvement (n = 17)
	Substance use (n = 45)

(table continues)

Predictor Variable	Description
Special education	Receives special education services
	Yes (n = 641)
	No (n = 6,315)
Distance	Distance from student's school to referred YFC
	Mean distance = 2.91 miles
	Median distance = 2.5 miles
	Modal distance = 0 (n = 1,511)
Referral source	Family, friends and clergy (n = 1,695)
	Self (n = 579)
	Non-school professionals (n = 21)
	School staff, not counselor or nurse
	(n = 404)
	Counselor (n = 505)
	Nurse (n = 849)
	Juvenile justice/court (n = 55)
	Other (n = 443)

Table 10.

Logistic Regression of Initial Use of Youth and Family Centers, Original Model

Predictor Variable	B	SE B	p	Odds Ratio
Chapter 1 status				
Yes[a]				
No	.076	.073	.296	1.079
LEP				
Yes[a]				
No	-.015	.079	.852	.985
Referral reason			.025	
Medical[a]				
None given	-.422	.322	.190	.656
Learning/behavior	-.015	.075	.844	.985
Mental health	-.038	.096	.694	.963
SOL	-.135	.118	.252	.873
Educational/social	.260	.179	.146	1.297
Court involvement	-.318	.119	.008	.727
Substance use	.759	.497	.127	.468

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Special education				
Yes[a]				
No	-.030	.100	.766	.971
Gender				
Male[a]				
Female	.045	.056	.429	1.046
Ethnicity			.883	
White[a]				
African American	-.498	.643	.439	.608
Latino	-.539	.639	.399	.583
Native American	-.505	.641	.430	.603
Asian	-.830	.736	.260	.436
Other	-.453	.700	.518	.636
Distance	.007	.008	.362	1.007
Food stamps				
Yes[a]				
No	-.142	.099	.150	.867

Note. LEP = Limited English Proficient. SOL = Speakers of Other Languages.

[a] Reference group.

Table 11.

Logistic Regression of Initial Use of Youth and Family Centers, Original Model Plus Referral Source

Predictor Variable	B	SE B	p	Odds Ratio
Chapter 1 status				
Yes[a]				
No	.037	.098	.706	1.038
LEP				
Yes[a]				
No	-.067	.109	.541	.936
Referral reason			.136	
Medical[a]				
None given	-.427	.472	.366	.652
Learning/behavior	.057	.101	.572	1.059
Mental health	.081	.131	.536	1.085
SOL	.194	.173	.264	1.214
Educational/social	.407	.246	.098	1.502
Court involvement	-.172	.160	.282	.842
Substance use	-1.431	.790	.070	.239

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Special education				
Yes[a]				
No	-.220	.153	.151	.803
Gender				
Male[a]				
Female	.135	.076	.077	1.145
Ethnicity			.828	
White[a]				
African American	.115	.875	.895	1.122
Latino	-.015	.869	.986	.985
Native American	.043	.871	.960	1.044
Asian	-.182	1.013	.857	.833
Other	.464	.978	.635	1.591
Distance	.006	.011	.574	1.006
Food stamps				
Yes[a]				
No	-.342	.140	.014	.710

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Referral Source			<.001	
School counselor[a]				
Self	.831	.291	.004	2.295
Non-school professionals	1.191	.280	<.001	3.292
School staff (not counselor or nurse)	.705	.540	.192	2.024
Family and friends	1.567	.295	<.001	4.793
Nurse	2.060	.315	<.001	7.849
Juvenile justice/truant office	1.124	.286	<.001	3.078

Note. LEP = Limited English Proficient. SOL = Speakers of Other Languages.

[a] Reference group.

Table 12.

Logistic Regression of Youth and Family Center Continued Use, Original Model

Predictor Variable	B	SE B	p	Odds Ratio
Chapter 1				
Yes[a]				
No	-.021	.068	.761	.980
LEP				
Yes[a]				
No	-.057	.074	.435	.944
Referral reason			.611	
Medical[a]				
None given	-.158	.327	.628	.854
Learning/behavior	-.047	.069	.499	.954
Mental health	-.165	.090	.066	.848
SOL	-.066	.112	.555	.936
Educational/social	-.024	.155	.879	.977
Court involvement	-.014	.115	.906	.987
Substance use	-.878	.639	.170	.416

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Special education				
Yes[a]				
No	.006	.092	.945	1.006
Gender				
Male[a]				
Female	.053	.052	.312	1.054
Ethnicity			.775	
White[a]				
African American	.814	.642	.204	2.258
Latino	.845	.638	.186	2.327
Native American	.814	.639	.203	2.257
Asian	.534	.747	.475	1.706
Other	.812	.689	.239	2.52
Distance	-.001	.007	.939	.999
Food stamps				
Yes[a]				
No	-.100	.089	.260	.905

Note. LEP = Limited English Proficient. SOL = Speakers of Other Languages.

[a] Reference group.

Table 13.

Logistic Regression of Youth and Family Center Continued Use, Original Model Plus Referral Source

Predictor Variable	B	SE B	p	Odds Ratio
Chapter 1 status				
Yes[a]				
No	-.003	.085	.972	.997
LEP				
Yes[a]				
No	-.042	.093	.651	.959
Referral reason			.445	
Medical[a]				
None given	.062	.431	.886	1.064
Learning/behavior	-.073	.088	.403	.929
Mental health	-.168	.113	.139	.846
SOL	.123	.142	.383	1.131
Educational/social	.077	.194	.690	1.080
Court involvement	.043	.143	.766	1.043
Substance use	-3.676	3.095	.235	.025

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Special education				
Yes[a]				
No	-.122	.123	.323	.885
Gender				
Male[a]				
Female	.051	.066	.441	1.052
Ethnicity			.586	
White[a]				
African American	1.386	1.095	.205	4.000
Latino	1.313	1.091	.229	3.718
Native American	1.288	1.092	.238	3.626
Asian	.747	1.210	.537	2.111
Other	1.527	1.141	.181	4.603
Distance	-.004	.009	.681	.996
Food stamps				
Yes[a]				
No	-.253	.111	.023	.776

(table continues)

Predictor Variable	B	SE B	p	Odds Ratio
Referral source			<.010	
School counselor[a]				
Self	.598	.313	.056	1.819
Family and friends	.365	.312	.242	1.441
Non-school professionals	.333	.304	.273	1.395
School staff (not counselor or nurse)	.146	.553	.792	1.157
School nurse	1.054	.316	.001	2.869
Juvenile justice/truant office	.274	.308	.375	1.315

Note. LEP = Limited English Proficient. SOL = Speakers of Other Languages.

[a]Reference group.

Table 14.

Initial Youth and Family Center Referral and Visit Data, Third Grade

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	301	18.1	219	18.1
Immunizations	61	3.7	41	3.3
Medical	196	11.8	147	12.1
Acute medical	129	7.8	99	8.1
Chronic medical	8	.5	6	.5
Medical exam	60	3.6	47	.9
Prescription	13	.8	11	.9
Total medical	467	28.2	351	28.8
Behavior disorder	372	22.4	278	22.9
Learning/ developmental	19	1.1	10	.8
Behavior and learning	41	2.5	30	2.5
Attendance	5	.3	3	.2
Total learning/behavior	437	26.3	321	26.4

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	24	1.4	16	1.3
Bereavement	10	.6	8	.7
Low self-esteem	10	.6	7	.6
Anxiety disorder	2	.1	1	.1
School refusal, rule out phobia	2	.1	2	.2
Abuse/trauma	10	.6	8	.7
Phase of life/ adjustment issues	43	2.6	30	2.5
Family problems, unspecified	12	.7	8	.7
Counseling, unspecified	50	3.0	35	2.9
Intensive mental health evaluation request	28	1.7	23	1.9
Total mental health	191	11.4	138	11.6

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
SOL	74	4.5	60	5.0
Total SOL	74	4.5	60	5.0
Parent education	14	.8	6	.5
Health education and promotion	123	7.4	78	6.4
Summer enrichment	16	1.0	12	1.0
Enrichment	15	.9	13	1.1
Social services	17	1.0	13	1.1
Total educational/ social services	185	11.1	122	10.1
Court ordered, unspecified	2	.1	2	.2
Total court involvement	2	.1	2	.2
Substance abuse and behavior disorder	2	.1	1	.1
Total substance abuse	2	.1	1	.1
Total	1,659	100.0	1,214	100.0

Note. SOL = Speakers of Other Languages program.

Table 15.

Initial Youth and Family Center Referral and Visit Data, Eighth Grade

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	863	30.5	652	30.8
Immunizations	336	11.9	253	12.0
Medical	311	11.0	223	10.5
Acute medical	154	5.4	116	5.5
Chronic medical	13	.5	7	.3
Medical exam	279	9.9	209	9.9
Exam and immunizations	1	.0	0	.0
Prescription	4	.1	4	.2
STD and pregnancy tests	23	.8	15	.7
Total medical	1,121	39.6	827	39.1
Behavior disorder	218	7.7	164	7.8
Learning/ developmental	11	.4	6	.3
Behavior and learning	17	.6	11	.5
Attendance	106	3.7	82	3.9
Total learning/behavior	352	12.4	263	12.5

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	33	1.2	25	1.2
Suicide attempt	3	.1	2	.1
Bereavement	5	.2	5	.2
Low self-esteem	5	.2	1	.0
Anxiety disorder	1	.1	1	.0
Abuse/trauma	18	.6	13	.6
Phase of life/ adjustment issues	53	1.9	40	1.9
Family problems, unspecified	12	.4	9	.4
Counseling, unspecified	37	1.3	29	1.3
Intensive mental health evaluation request	19	.7	15	.7
Total mental health	186	6.6	140	6.4
SOL	125	4.4	99	4.7
SOL and immunizations	1	.0	1	.0
Total SOL	126	4.4	100	4.7

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Parent education	16	.6	11	.5
Health education and promotion	54	1.9	38	1.8
Summer enrichment	4	.1	4	.2
Enrichment	48	1.7	35	1.7
Social services	21	.7	16	.8
Total educational/ social services	143	5.5	104	5.0
Criminal offender	4	.1	3	.1
Court ordered, unspecified	4	.1	1	.0
Total court involvement	8	.2	4	.1
Substance abuse and behavior disorder	22	.8	15	.7
Substance abuse	9	.3	7	.3
Total substance abuse	31	1.1	22	1.0
Total	2,830	100.0	2,112	100.0

Note. STD = sexually transmitted disease. SOL = Speakers of Other Languages program.

Table 16.

Initial Youth and Family Center Initial Referral and Visit Data, 10th grade

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	815	33.0	603	33.0
Immunizations	242	9.8	190	10.2
Medical	396	16.1	293	16.0
Acute medical	147	6.0	106	5.8
Chronic medical	10	.4	7	.4
Medical exam	328	13.3	250	13.6
Prescription	2	.1	2	.1
STD and pregnancy tests	79	3.2	63	3.4
Total medical	1,204	48.9	911	49.5
Behavior disorder	68	2.8	55	3.0
Learning/developmental	16	.6	11	.6
Behavior and learning	6	.2	6	.3
Attendance	45	1.8	33	1.8
Total learning/behavior	135	5.4	105	5.7

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	20	.8	13	.7
Suicide attempt	1	.0	1	.1
Bereavement	9	.4	4	.2
Low self-esteem	3	.1	3	.2
Abuse/trauma	9	.4	5	.3
Phase of life/ adjustment issues	22	.9	16	.9
Family problems, unspecified	12	.5	8	.4
Counseling, unspecified	29	1.2	21	1.1
Intensive mental health evaluation request	10	.4	8	.4
Total mental health	115	4.7	79	4.3
SOL	37	1.5	29	1.5
SOL and immunizations	1	.0	1	.1
Total SOL	38	1.5	29	1.6

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Parent education	10	.4	7	.4
Health education and promotion	71	2.9	51	2.8
Summer enrichment	3	.1	2	.1
Enrichment	37	1.5	26	1.4
Social services	20	.8	12	.6
Total educational/ social services	141	5.7	98	5.3
Criminal offender	5	.2	3	.2
Court ordered, unspecified	2	.1	1	.1
Total court involvement	7	.3	4	.3
Substance abuse	8	.3	6	.3
Substance abuse and behavior disorder	4	.2	1	.1
Total substance abuse	12	.5	1	.1
Total	2,467	100.0	1,837	100.0

Note. STD = sexually transmitted disease. SOL = Speakers of Other Languages program.

Table 17.

Number of Students Referred to Youth and Family Centers by Referral Category and Ethnicity

Referral Category	White	African American	Latino	Native American	Asian	Other	Total
Unspecified	213	846	897	9	9	5	1,979
Medical	284	1,074	1,374	14	38	8	2,792
Learning/ Behavior	151	414	349	7	3	0	924
Mental health	122	154	209	3	4	0	492
SOL	1	3	226	0	8	0	238
Educational/ Social	29	238	192	1	5	4	469
Court Involvement	2	9	6	0	0	0	17
Substance abuse	6	5	34	0	0	0	45
Total referrals	808	2,743	3,287	34	67	17	6,956

Note. SOL = Speakers of Other Languages program.

Table 18.

Number of Students Who Made an Initial Visit to a Youth and Family Center by Referral Category and Ethnicity

Referral Category	White	African American	Latino	Native American	Asian	Other	Total
Unspecified	158	622	671	7	8	5	1,471
Medical	213	803	1,020	7	27	6	2,076
Learning/behavior	119	300	260	6	3	0	688
Mental health	80	120	150	2	4	0	356
SOL	1	2	181	0	5	0	189
Educational/social		157	135	1	4	3	322
Court Involvement	1	5	4	0	0	0	10
Substance abuse	5	2	23	0	0	0	30
Total	599	2,011	2,444	23	51	14	5,142

Note. SOL = Speakers of Other Languages program.

Table 19.

Initial Youth and Family Center Referral and Visit Data, White

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	213	26.4	158	26.4
Immunizations	69	8.5	54	9.0
Medical	93	11.5	72	12.0
Acute medical	49	6.1	33	5.5
Chronic medical	5	.6	3	.5
Medical exam	50	6.2	37	6.2
Medical exam and immunizations	1	.0	0	.0
Prescription	5	.6	5	.8
STD and pregnancy tests	13	1.6	9	1.5
Total medical	284	35.1	213	35.5
Behavior disorder	132	16.3	104	17.4
Learning/developmental	6	.7	4	.7
Behavior and learning	5	.6	4	.7
Attendance	8	1.0	7	1.2
Total learning/behavior	151	18.6	119	20.0

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	31	3.8	18	3.0
Suicide attempt	2	.2	2	.3
Bereavement	6	.7	4	.7
Low self-esteem	4	.5	1	.2
Abuse/trauma	7	.9	4	.7
Phase of life/ adjustment issues	29	3.6	19	3.2
Family problems, unspecified	5	.6	3	.5
Counseling, unspecified	23	2.8	16	2.7
Intensive mental health evaluation request	15	1.9	13	2.2
Total mental health	122	15.0	80	13.5
SOL	1	.1	1	.2
Total SOL	1	.1	1	.2

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Parent education	4	.5	4	.7
Health education and promotion	11	1.4	8	1.3
Summer enrichment	1	.1	1	.2
Enrichment	11	1.4	8	1.3
Social services	2	.2	1	.2
Total educational/ social services	29	3.6	22	3.7
Criminal offender	1	.1	0	.0
Court ordered, unspecified	1	.1	1	.2
Total court involvement	2	.2	1	.2
Substance abuse	2	.2	2	.3
Substance abuse and behavior disorder	4	.5	3	.5
Total substance abuse	6	.7	5	.8
Total	808	100.0	599	100.0

Note. STD = sexually transmitted disease. SOL = Speakers of Other Languages program.

Table 20.

Initial Youth and Family Center Referral and Visit Data, African American

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	846	30.8	622	30.9
Immunizations	217	7.9	158	7.9
Medical	252	9.2	186	9.2
Acute medical	142	5.2	106	5.3
Chronic medical	20	.7	13	.6
Medical exam	382	13.9	294	14.6
Medical exam and immunizations	1	.0	0	.0
Prescription	10	.4	9	.4
STD and pregnancy tests	50	1.8	37	1.8
Total medical	1,074	39.1	803	39.8
Behavior disorder	296	10.8	221	11.0
Learning/developmental	23	.8	14	.7
Behavior and learning	37	1.3	26	1.3
Attendance	58	2.1	39	1.9
Total learning/behavior	414	15.0	300	14.9

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	13	.5	11	14.9
Suicide attempt	1	.0	1	.0
Bereavement	10	.4	6	.3
Low self-esteem	7	.3	6	.3
Anxiety disorder	1	.0	0	.0
Abuse/trauma	13	.5	9	.4
Phase of life/ adjustment issues	43	1.6	33	1.6
Family problems, unspecified	10	.4	8	.4
Counseling, unspecified	39	1.4	33	1.6
Intensive mental health evaluation request	17	.6	13	.6
Total mental health	154	5.7	120	5.7
SOL	3	.1	2	.1
Total SOL	3	.1	2	.1
Parent education	9	.3	5	.2
Health education and promotion	149	5.4	95	4.7
Summer enrichment	2	.1	2	.1

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Enrichment	44	1.6	31	1.5
Social services	34	1.2	24	1.2
Total educational/ social services	238	8.7	157	7.7
Criminal offender	5	.2	4	.2
Court ordered, unspecified	4	.1	1	.0
Total court involvement	9	.3	5	.2
Substance abuse	3	.1	2	.1
Substance abuse and behavior disorder	2	.1	0	.0
Total substance abuse	5	.2	2	.1
Total	2,743	100.0	2,011	100.0

Note. STD = sexually transmitted disease. SOL = Speakers of Other Languages program.

Table 21.

Initial Youth and Family Center Referral and Visit Data, Latino

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	897	27.2	761	27.4
Immunizations	327	9.9	246	10.1
Medical	539	16.4	393	16.1
Acute medical	235	7.1	177	7.2
Chronic medical	6	.2	4	.2
Medical exam	224	6.8	166	6.8
Prescription	4	.1	3	.1
STD and pregnancy tests	39	1.2	31	1.3
Total medical	1,374	41.7	1,020	41.8
Behavior disorder	223	6.8	165	6.8
Learning/developmental	15	.5	7	.3
Behavior and learning	21	.6	16	.7
Attendance	90	2.7	72	2.9
Total learning/behavior	349	10.6	260	10.7

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Depressive disorder	31	.9	24	1.0
Suicide attempt	1	.0	0	.0
Bereavement	8	.2	7	.3
Low self-esteem	6	.2	3	.1
Anxiety disorder	1	.0	1	.0
School refusal, rule out phobia	2	.1	2	.0
Abuse/trauma	17	.5	13	.5
Phase of life/ adjustment issues	46	1.4	34	1.4
Family problems, unspecified	20	.6	13	.5
Counseling, unspecified	53	1.6	34	1.4
Intensive mental health evaluation request	24	.7	19	.8
Total mental health	209	6.2	150	6.0

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
SOL	224	6.8	179	7.3
SOL and immunizations	2	.1	2	.1
Total SOL	226	6.9	181	7.4
Parent education	25	.8	13	.5
Health education and promotion	82	2.5	59	2.4
Summer enrichment	20	.6	15	.6
Enrichment	44	1.3	34	1.4
Social services	21	.6	14	.6
Total educational/ social services	192	5.8	135	5.5
Criminal offender	3	.1	2	.1
Court ordered, unspecified	3	.1	2	.1
Total court involvement	6	.2	4	.2

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Substance abuse	12	.4	9	.4
Substance abuse and behavior disorder	22	.7	14	.6
Total substance abuse	34	1.1	23	1.0
Total	3,287	100.0	2,444	100.0

Note. STD = sexually transmitted disease. SOL = Speakers of Other Languages program.

Table 22.

Initial Youth and Family Center Referral and Visit Data, Native American

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	9	26.5	7	30.4
Immunizations	5	14.7	2	8.7
Medical	3	8.8	2	8.7
Acute medical	1	2.9	0	.0
Medical exam	5	14.7	3	13.0
Total medical	14	41.1	7	30.4
Behavior disorder	5	14.7	4	17.4
Learning/developmental	1	2.9	1	4.3
Behavior and learning	1	2.9	1	4.3
Total learning/behavior	7	20.5	6	26.0
Depressive disorder	2	5.9	1	4.3
Counseling, unspecified	1	2.9	1	4.3
Total mental health	3	8.8	2	8.6
Health education and promotion	1	2.9	1	4.3
Total educational/ social services	1	2.9	1	4.3
Total	34	100.0	23	100.0

Table 23.

Initial Youth and Family Center Referral and Visit Data, Asian

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	9	13.4	8	15.7
Immunizations	18	26.9	16	31.4
Medical	13	19.4	6	11.8
Acute medical	3	4.5	3	5.9
Medical exam	4	6.0	2	3.9
Total medical	38	56.8	27	53.0
Behavior disorder	2	3.0	2	3.9
Learning/developmental	1	1.5	1	2.0
Total learning/behavior	3	4.5	3	5.9
Low self-esteem	1	1.5	1	2.0
Anxiety disorder	1	1.5	1	2.0
Family problems, unspecified	1	1.5	1	2.0
Intensive mental health evaluation request	1	1.5	1	2.0
Total mental health	4	6.0	4	8.0

(table continues)

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
SOL	8	11.9	5	9.8
Total SOL	8	11.9	5	9.8
Health education and promotion	4	6.0	3	5.9
Enrichment	1	1.5	1	2.0
Total educational/ social services	5	7.5	4	7.9
Total	67	100.0	51	100.0

Note. SOL = Speakers of Other Languages program.

Table 24.

Initial Youth and Family Center Referral and Visit Data, Other Ethnicity

Referral Reason	No. of Referrals	Percent	No. who visited at least one time	Percent
Unspecified	5	29.4	5	35.7
Immunizations	3	17.6	3	21.4
Medical	3	17.6	2	14.3
Medical exam	2	11.8	1	7.1
Total medical	8	47.0	6	42.9
Parent education	2	11.8	2	14.3
Health education and promotion	1	5.9	0	.0
Social services	1	5.9	1	7.1
Total educational/ Social services	4	23.6	3	21.4
Total	17	100.0	14	100.0

Table 25.

Percentage of Students Who Made at Least One Visit to a Youth and Family Center After Initial Referral

Referral Category	White	African American	Latino	Native American	Asian	Other
Unspecified	74.2%	73.5%	74.8%	77.8%	88.9%	100.0%
Medical	75.0%	74.8%	74.2%	50.0%	71.1%	75.0%
Learning/behavior	78.8%	72.5%	74.5%	85.7%	100.0%	
Mental health	65.6%	77.9%	71.8%	66.7%	100.0%	
SOL	100.0%	66.7%	80.1%		62.5%	
Educational/social	75.9%	66.0%	70.3%	100.0%	80.0%	75.0%
Court Involvement	50.0%	55.6%	66.7%			
Substance abuse	83.3%	40.0%	67.6%			

Note. SOL = Speakers of Other Languages program.

Table 26.

Youth and Family Center Services Accessed by Ethnicity

Ethnicity	COPC	MHMR	Counseling	Youth	Family	Total
White	412	83	113	51	35	694
African American	1,394	255	390	187	134	2,360
Latino	1,655	345	503	227	171	2,901
Native American	16	1	3	1	3	24
Asian	40	5	7	4		56
Other	9	3	3		1	16
Total	3,526	692	1,019	470	344	6,051

Note. COPC = Community Oriented Primary Care services. MHMR = Mental Health Mental Retardation Center services. Chi-square results of COPC use by ethnicity: χ^2 = (3, N = 6956) = 1.11, p = .774. Chi-square results of MHMR use by ethnicity: χ^2 = (3, N = 6956) = 3.21, p = .361. Chi-square results of Counseling services use by ethnicity: χ^2 = (3, N = 6956) = 3.06, p = .382. Chi-square results of Youth services use by ethnicity: χ^2 = (3, 6956) = 1.58, p = .665. Chi-square results of Family services use by ethnicity: χ^2 = (3, 6956) = 1.74, p = .629.

Table 27.

Youth and Family Center Services Accessed by Grade

Grade	COPC	MHMR	Counseling	Youth	Family	Total
3rd Grade	803	163	275	93	95	1,429
8thGrade	1,450	290	405	207	142	2,494
10th Grade	1,273	239	339	170	107	2,128
Total	3,526	692	1,019	470	344	6,051

Note. COPC = Community Oriented Primary Care services. MHMR = Mental Health Mental Retardation Center services. Chi-square results of COPC use by grade: χ^2 = (2, N = 6956) = 4.63, p = .099. Chi-square results of MHMR use by grade: χ^2 = (2, N = 6956) = .50, p = .780. Chi-square results of Counseling services use by grade: χ^2 = (2, N = 6956) = 6.81, p = .033. Chi-square results of Youth services use by grade: χ^2 = (2, 6956) = 4.96, p = .084. Chi-square results of Family services use by grade: χ^2 = (2, 6956) = 4.13, p = .127.

Table 28.

Reading Scores, Grade 3, Visited a Youth and Family Center: Yes/No

Year	Visited Upon Referral	n	Mean Score	SD
1	No	20	46.09	24.82
1	Yes	54	40.31	18.90
2	No	20	37.93	19.30
2	Yes	54	38.35	22.16

Table 29.

MANOVA, Reading Scores, Grade 3, Visited a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	1.147	.016	.184
Year 2 scores	1	.006	.000	.051
Year 1 error	72	(425.501)		
Year 2 error	72	(459.840)		
Within subjects				
Multivariate main effect	2	1.218	.033	.258

Note. Box's M = 5.534, F = 1.768 (3, 22295.97), p = .151. Values enclosed in parentheses represent mean square errors.

Table 30.

Reading Scores, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Score	SD
1	No	48	42.50	21.19
1	Yes	26	40.70	19.96
2	No	48	35.46	19.90
2	Yes	26	43.36	23.19

Table 31.

MANOVA, Reading Scores, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.127	.002	.064
Year 2 scores	1	2.361	.032	.329
Year 1 error	72	(431.517)		
Year 2 error	72	(445.275)		
Within subjects				
Multivariate main effect	2	3.263	.084	.603

Note. Box's M = 2.082, F = .670 (3, 72941.36), p = .570. Values enclosed in parentheses represent mean square errors.

Table 32.

Reading Scores, Grade 8, Visited a Youth and Family Center: Yes/No

Year	Visited Upon Referral	n	Mean Score	SD
1	No	31	34.39	14.91
1	Yes	89	41.67	17.27
2	No	31	34.65	16.98
2	Yes	89	42.03	18.77

Table 33.

MANOVA, Reading Scores, Grade 8, Visited a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	4.370*	.036	.545
Year 2 scores	1	3.732	.031	.483
Year 1 error	118	(278.883)		
Year 2 error	118	(335.998)		
Within subjects				
Multivariate main effect	2	2.590	.079	.508

Note. Box's M = 1.287, F = .418 (3, 52869.76), p = .740. Values enclosed in parentheses represent mean square errors.

*p < .05.

Table 34.

Reading Scores, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Score	SD
1	No	82	38.76	16.42
1	Yes	36	42.01	18.01
2	No	82	40.24	18.47
2	Yes	36	39.87	18.93

Table 35.

MANOVA, Reading Scores, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.954	.008	.163
Year 2 scores	1	.010	.000	.051
Year 1 error	118	(286.891)		
Year 2 error	118	(346.594)		
Within subjects				
Multivariate main effect	2	.798	.013	.184

Note. Box's M= .747, F=.243 (3, 117009.2), p=.866. Values enclosed in parentheses represent mean square errors.

Table 36.

Math Scores, Grade 3,Visited a Youth and Family Center:

Yes/No

Year	Visited Upon Referral	n	Mean Score	SD
1	No	20	48.13	21.85
1	Yes	54	42.85	20.52
2	No	20	39.21	20.33
2	Yes	54	42.84	24.19

Table 37.

MANOVA, Math Scores, Grade 3, Visited a Youth and

Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.931	.013	.159
Year 2 scores	1	.357	.005	.091
Year 1 error	72	(436.026)		
Year 2 error	72	(436.026)		
Within subjects				
Multivariate main effect	2	2.312	.061	.455

Note. Box's M= 4.889, F=1.562 (3, 22295.97), p= .196. Values enclosed in parentheses represent mean square errors.

Table 38.

Math Scores, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Score	SD
1	No	48	43.08	20.77
1	Yes	26	46.48	21.28
2	No	48	39.49	22.48
2	Yes	26	46.23	23.13

Table 39.

MANOVA, Math Scores, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.442	.006	.101
Year 2 scores	1	1.444	.020	.220
Year 1 error	72	(438.969)		
Year 2 error	72	(531.689)		
Within subjects				
Multivariate main effect	2	.754	.021	.173

Note. Box's M= .180, F= .058 (3, 72941.36), p= .982.Values enclosed in parentheses represent mean square errors.

Table 40.

Math Scores, Grade 8,Visited a Youth and Family Center: Yes/No

Year	Visited Upon Referral	n	Mean Score	SD
1	No	31	42.79	14.73
1	Yes	89	44.23	16.38
2	No	31	39.45	18.15
2	Yes	89	42.16	16.04

Table 41.

MANOVA, Math Scores, Grade 8, Visited a Youth and

Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.186	.002	.071
Year 2 scores	1	.610	.005	.121
Year 1 error	118	(255.134)		
Year 2 error	118	(275.725)		
Within subjects				
Multivariate main effect	2	.336	.006	.103

Note. Box's M = 3.239, F = 1.051 (3, 52869.76), p = .369. Values enclosed in parentheses represent mean square errors.

Table 42.

Math Scores, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Score	SD
1	No	82	43.63	15.73
1	Yes	38	44.35	16.51
2	No	82	41.30	16.46
2	Yes	38	41.80	17.05

Table 43.

MANOVA, Math Scores, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.053	.000	.056
Year 2 scores	1	.024	.000	.053
Year 1 error	118	(255.042)		
Year 2 error	118	(277.094)		
Within subjects				
Multivariate main effect	2	.027	.000	.054

Note. Box's M= .636, F= .207 (3, 117009.2, p = .892. Values enclosed in parentheses represent mean square errors.

Table 44.

Attendance, Grade 3, Visited a Youth and Family

Center: Yes/No

Year	Visit	n	Mean Days	SD
1	No	20	171.15	3.17
1	Yes	54	167.80	9.53
2	No	20	169.75	5.08
2	Yes	54	167.17	9.75

Table 45.

Repeated Measures MANOVA, Attendance, Grade 3,

Visited a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Visit yes/no	1	2.093[a]	.028	.298
Year 1 visit yes/no	1	1.537[b]	.032	.329
Year 2 visit yes/no	1	1.126[b]	.017	.199
Within group error	72	(122.887)		
Within subjects				
Year	1	1.282[a]	.017	.201
Year x Visit	1	.185[a]	.003	.071
	72	(23.454)		

Note. Box's M = 26.932, F = 8.603 (3, 22295.97), p < .001. Mauchly's W = 1.00, p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

Table 46.

Attendance, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Days	SD
1	No	48	168.81	8.94
1	Yes	26	168.50	7.51
2	No	48	167.56	8.83
2	Yes	26	168.42	8.84

Table 47.

Repeated Measures MANOVA, Attendance, Grade 3, Continued Use of a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Continued use yes/no	1	.020[a]	.000	.052
Year 1 continued use yes/no	1	-.151[b]	.000	.053
Year 2 continued use yes/no	1	-.400[b]	.002	.068
Within group error	72	(126.424)		
Within subjects				
Year	1	.636[a]	.009	.123
Year x continued use	1	.497[a]	.007	.107
Within group error	72	(23.353)		

Note. Box's M = 3.994, F = 1.286 (3, 72941.36), p < .277.

Mauchly's W = 1.00, p < .001.Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

Table 48.

Attendance, Grade 8, Visited a Youth and Family

Center: Yes/No

Year	Visit	n	Mean Days	SD
1	No	31	167.13	8.67
1	Yes	89	168.26	8.79
2	No	31	166.55	9.63
2	Yes	89	166.38	12.68

Table 49.

Repeated Measures MANOVA, Attendance, Grade 8, Visited a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Visit yes/no	1	.076[a]	.001	.059
Year 1 visit yes/no	1	.618[b]	.003	.094
Year 2 visit yes/no	1	.067[b]	.000	.051
Within group error	118	(140.200)		
Within subjects				
Year	1	.868[a]	.007	.152
Year x Visit	1	.241[a]	.002	.078
Within group error	118	(79.946)		

Note. Box's M = 6.880, F = 2.233 (3, 52869.76), p = .082 Mauchly's W = 1.00, p < .001.Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

Table 50.

Attendance, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Year	Continued Use	n	Mean Days	Standard Deviation
1	No	82	166.77	9.88
1	Yes	38	170.55	4.67
2	No	82	164.91	13.60
2	Yes	38	169.68	6.06

Table 51.

Repeated Measures MANOVA, Attendance, Grade 8, Continued Use of a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Continued use yes/no	1	7.184[a]**	.057	.758
Year 1 continued use yes/no	1	-2.245[b]*	.041	.605
Year 2 continued use yes/no	1	-2.065[b]*	.035	.535
Within group error	118	(132.240)		
Within subjects				
Year	1	1.202[a]	.010	.193
Year x continued use	1	.158[a]	.001	.068
Within group error	118	(80.002)		

Note. Box's M = 78.619, F = 25.621 (3, 117009.2), p = .277.

Mauchly's W = 1.00,p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

*p < .05. **p < 01.

Table 52.

Attendance, Grade 10, Visited a Youth and Family Center: Yes/No

Year	Visit	n	Mean Days	Standard Deviation
1	No	51	164.67	7.67
1	Yes	140	165.50	9.13
2	No	51	160.65	14.54
2	Yes	140	163.05	12.86

Table 53.

Repeated Measures MANOVA, Attendance, Grade 10, Visited a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Visit yes/no	1	1.009[a]	.005	.170
Year 1 visit yes/no	1	-.581[b]	.002	.089
Year 2 visit yes/no	1	-1.103[b]	.006	.195
Within group error	189	(194.094)		
Within subjects				
Year	1	12.972[a]**	.064	.948
Year x Visit	1	.764[a]	.004	.140
Within group error	189	(60.311)		

Note. Box's M = 26.932, F = 8.603 (3, 22295.97), p = .001. Mauchly's W = 1.00, p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

**p < 01.

Table 54.

Attendance, Grade 10, Continued Use of a Youth and Family Center:

Yes/No

Year	Continued Use	n	Mean Days	Standard Deviation
1	No	137	165.10	8.86
1	Yes	54	165.72	8.54
2	No	137	162.64	12.90
2	Yes	54	161.81	14.48

Table 55.

Repeated Measures MANOVA, Attendance, Grade 10, Continued Use of a Youth and Family Center: Yes/No

Source	df	Value	η^2	Power
		Between subjects		
Continued use yes/no	1	.004[a]	.000	.050
Year 1 continued use yes/no	1	-.440[b]	.001	.072
Year 2 continued use yes/no	1	.385[b]	.001	.067
Within group error	189	(195.126)		
		Within subjects		
Year	1	13.012[a]**	.064	.948
Year x continued use	1	.673[a]	.004	.129
	189	(60.340)		

Note. Box's M = 3.179, F = 1.043 (3, 190699.3), p = .372. Mauchly's W = 1.00, p < .001.Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

**p < 01.

Table 56.

Reading Scores, Grade 3, Mental Health (MH) Services Use: Yes/No

Year	MH Services Use	n	Mean Score	Standard Deviation
1	No	32	41.09	23.92
1	Yes	23	37.23	20.67
2	No	32	33.18	16.80
2	Yes	23	35.80	20.51

Table 57.

MANOVA, Reading Scores, Grade 3, Mental Health

Services Use: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.391	.007	.094
Year 2 scores	1	.272	.005	.080
Year 1 error	53	(511.940)		
Year 2 error	53	(339.615)		
Within subjects				
Multivariate main effect	2	.777	.029	.175

Note. Box's M = 2.392, F= .764 (3, 180897.0, p= .514. Values enclosed in parentheses represent mean square errors.

Table 58.

Math Scores, Grade 3, Mental Health (MH) Services Use: Yes/No

Year	MH Services Use	n	Mean Score	SD
1	No	31	40.08	14.80
1	Yes	20	50.13	24.35
2	No	31	29.68	18.56
2	Yes	20	44.43	27.62

Table 59.

MANOVA, Math Scores, Grade 3, Mental Health Services

Use: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	3.368	.064	.436
Year 2 scores	1	5.220*	.096	.610
Year 1 error	53	(363.925)		
Year 2 error	53	(506.870)		
Within subjects				
Multivariate main effect	2	2.826	.105	.529

Note. Box's M = 16.324, F= 5.183 (3, 73415.2, p = .001. Values enclosed in parentheses represent mean square errors.

*p < .05

Table 60.

Reading Scores, Grade 8, Mental Health (MH) Services

Use: Yes/No

Year	MH Services Use	n	Mean Score	SD
1	No	15	43.13	15.61
1	Yes	14	36.26	15.53
2	No	15	44.55	16.64
2	Yes	14	35.89	18.94

Table 61. MANOVA, Reading Scores, Grade 8, Mental Health Services Use: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	1.407	.050	.208
Year 2 scores	1	1.718	.060	.244
Year 1 error	27	(242.450)		
Year 2 error	27	(316.262)		
Within subjects				
Multivariate main effect	2	.887	.064	.186

Note. Box's M = 2.224, F= .682 (3, 158539.3, p = .563. Values enclosed in parentheses represent mean square errors.

Table 62.

Math Scores, Grade 8, Mental Health (MH) Services Use: Yes/No

Year	MH Service Use	n	Mean Score	Standard Deviation
1	No	14	44.66	23.92
1	Yes	11	45.82	20.03
2	No	14	44.75	21.50
2	Yes	11	43.43	17.83

Table 63.

MANOVA, Math Scores, Grade 8, Mental Health Services Use: Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.016	.001	.052
Year 2 scores	1	.027	.001	.053
Year 1 error	23	(513.015)		
Year 2 error	23	(399.464)		
Within subjects				
Multivariate main effect	2	.061	.005	.058

Note. Box's M = 3.684, F= 1.110 (3, 79731.36, p = .344. Values enclosed in parentheses represent mean square errors.

Table 64.

Attendance, Grade 3, Mental Health (MH) Services Use: Yes/No

Year	MH Services Use	n	Mean Days	Standard Deviation
1	No	20	171.00	3.58
1	Yes	12	170.92	4.34
2	No	20	169.65	4.65
2	Yes	12	171.50	2.81

Table 65.

Repeated Measures MANOVA, Grade 3, Mental Health Services Use:Yes/No

Source	df	Value	η^2	Power
Between subjects				
Mental health yes/no	1	.532[a]	.017	.109
Year 1 mental health yes/no	1	.059[b]	.000	.050
Year 2 mental health yes/no	1	-1.244[b]	.049	.226
Within group error	30	(21.991)		
Within subjects				
Year	1	.229[a]	.008	.075
Year x mental health yes/no	1	1.456[a]	.046	.215
Within group error	30	(9.624)		

Note. Box's M = 4.643, F= 1.424 (3, 17832.40, p = .234. Mauchly's W = 1.00, p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

Table 66.

Attendance, Grade 8, Mental Health (MH) Services Use: Yes/No

Year	MH Services Use	n	Mean Days	Standard Deviation
1	No	6	157.00	15.01
1	Yes	6	160.83	11.09
2	No	6	159.33	8.43
2	Yes	6	156.83	18.61

Table 67.

Attendance, Grade 10, Mental Health (MH) Services Use: Yes/No

Year	MH Services Use	n	Mean Days	Standard Deviation
1	No	3	163.00	7.81
1	Yes	2	163.50	16.26
2	No	3	135.33	35.47
2	Yes	2	161.50	14.85

Table 68.

Reading Scores, Grade 3, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Score	Standard Deviation
1	No	16	40.36	15.82
1	Yes	30	40.32	19.89
2	No	16	40.42	16.94
2	Yes	30	36.99	22.64

Table 69.

MANOVA, Reading Scores, Grade 3, Medical Services Use:

Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.000	.000	.050
Year 2 scores	1	.282	.006	.081
Year 1 error	44	(346.100)		
Year 2 error	44	(435.821)		
Within subjects				
Multivariate main effect	2	.258	.012	.088

Note. Box's M = 2.010, F= .632 (3, 24578.56, p = .594. Values enclosed in parentheses represent mean square errors.

Table 70.

Math Scores, Grade 3, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Score	Standard Deviation
1	No	15	52.27	20.88
1	Yes	29	45.82	20.47
2	No	15	46.85	17.17
2	Yes	29	39.93	23.24

Table 71.

MANOVA, Math Scores, Grade 3, Medical Services Use:

Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.970	.023	.161
Year 2 scores	1	1.031	.024	.168
Year 1 error	42	(424.660)		
Year 2 error	42	(458.357)		
Within subjects				
Multivariate main effect	2	.580	.028	.140

Note. Box's M = 2.212, F= .693 (3, 19879.51, p = .556. Values enclosed in parentheses represent mean square errors.

Table 72.

Reading Scores, Grade 8, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Score	Standard Deviation
1	No	61	37.23	15.08
1	Yes	114	40.19	16.34
2	No	61	40.52	16.38
2	Yes	114	41.68	17.15

Table 73.

MANOVA, Reading Scores, Grade 8, Medical Services Use:

Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	1.366	.008	.213
Year 2 scores	1	.187	.001	.071
Year 1 error	173	(253.366)		
Year 2 error	173	(285.327)		
Within subjects				
Multivariate main effect	2	.788	.009	.183

Note. Box's M = 1.807, F= .594 (3, 418327.1, p = .619. Values enclosed in parentheses represent mean square errors.

Table 74.

Math Scores, Grade 8, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Score	Standard Deviation
1	No	60	43.99	18.14
1	Yes	111	44.16	18.66
2	No	60	41.57	18.65
2	Yes	111	42.46	19.64

Table 75.

MANOVA, Math Scores, Grade 8, Medical Services Use:

Yes/No

Source	df	F	η^2	Power
Between subjects				
Year 1 scores	1	.004	.000	.050
Year 2 scores	1	.083	.000	.059
Year 1 error	169	(341.517)		
Year 2 error	169	(372.496)		
Within subjects				
Multivariate main effect	2	.079	.001	.062

Note. Box's M = .205, F= .067 (3, 414720.6, p = .977. Values enclosed in parentheses represent mean square errors.

Table 76.

Attendance, Grade 3, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Days	Standard Deviation
1	No	12	169.58	5.32
1	Yes	15	163.47	14.74
2	No	12	168.17	7.43
2	Yes	15	167.80	10.04

Table 77.

Repeated Measures MANOVA, Attendance, Grade 3, Medical Services Use: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Medical yes/no	1	.721[a]	.028	.129
Year 1 medical yes/no	1	1.363[b]	.069	.259
Year 2 medical yes/no	1	.105[b]	.000	.051
Within group error	25	(194.304)		
Within subjects				
Year	1	1.371[a]	.052	.203
Year x medical yes/no	1	5.328[a]*	.176	.602
Within group error	25	(20.685)		

Note. Box's M = 14.521, F = 4.413 (3, 132508.1), p = .004. Mauchly's W = 1.00, p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

*p < .05.

Table 78.

Attendance, Grade 8, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Days	SD
1	No	27	165.00	15.66
1	Yes	49	168.35	10.60
2	No	27	159.74	30.71
2	Yes	49	165.96	8.52

Table 79.

Repeated Measures MANOVA, Attendance, Grade 8, Medical Services Use: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Medical yes/no	1	1.867[a]	.025	.271
Year 1 medical yes/no	1	-1.107[b]	.016	.195
Year 2 medical yes/no	1	-1.334[b]	.023	.260
Within group error	74	(426.659)		
Within subjects				
Year	1	4.596[a]*	.058	.562
Year x medical yes/no	1	.648[a]	.009	.125
Within group error	74	(110.749)		

Note. Box's M = 56.112, F = 18.085 (3, 82572.43), p <.001. Mauchly's W = 1.00, p<.001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

*p < .05.

Table 80.

Attendance, Grade 10, Medical Services Use: Yes/No

Year	Medical Services Use	n	Mean Days	Standard Deviation
1	No	32	166.53	5.83
1	Yes	74	166.46	8.72
2	No	32	162.87	11.46
2	Yes	74	165.30	9.41

Table 81.

Repeated Measures MANOVA, Attendance, Grade 10, Medical Services Use: Yes/No

Source	df	Value	η^2	Power
Between subjects				
Medical yes/no	1	.491[a]	.005	.107
Year 1 medical yes/no	1	.043[b]	.000	.050
Year 2 medical yes/no	1	-1.137[b]	.012	.203
Within group error	104	(125.814)		
Within subjects				
Year	1	6.648[a]*	.060	.724
Year x medical yes/no	1	1.781[a]	.017	.262
Within group error	104	(39.006)		

Note. Box's M = 10.924, F = 3.546 (3, 73198.37), p = .014. Mauchly's W= 1.00, p < .001. Values enclosed in parentheses represent mean square errors.

[a] F values. [b] t values.

*p < .05.

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